

**BENI. URSINI ...
TRIGONOMETRIA
CUM MAGNO
LOGARITHMOR.
CANONE**

Benjamin Ursinus, Peter Rollos,
Farnese



BIBLIOTECA NAZ.
Vittorio Emanuele III

XXXII

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NAPOLI

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SERENISSIMO

ac Potentissimo Principi,

ac Domino,

DN. GEORGIO
WILHELMO

MARCHIONI BRANDENBUR-
GICO;

*S. ROM. IMP. ARCHICAMERARIO,
& ELECTORI SEPTEMVIRO;*

Borussæ, Juliaci, Cliviæ, Montium, Stetini Pome-
ranorum, Cassubiorum, Vandalorum,
Crolnæq; ac Carnoviz in Silesiâ,
DUCI;

BURGGRAVIO Norinbergensi;

PRINCIPI Rugiæ;

COMITI Marcæ & Ravensburgi;

DOMINO Ravenstent;

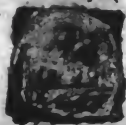
&c.

Domino suo Clementissimo.



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SERE-



SERENISSIME ELECTOR, DOMINE
Clementissimè:

Duo sunt, quorum TUÆ SERENITATI, hujus
Instituti mei nomine, præloquij loco, rationes
reddendas duxi. Unum, cur post HOMERUM
Iliada, hoc est, post REGIOMONTANUM, FINCKIUM,
RHETICUM, PITISCUM, LANSBERGIUM, VIE-
TAM, CLAVIUM, NEPERUM, Trigonometriam
conscripserim: alterum, cur sub TUÆ SERENIT.
nomine. Utrumq; mihi causæ persuaferunt plurimæ.

Expertus siquidem sum, & meo te exemplo &
aliorum, omnem in rebus Mathematicis vel saltem
potissimam difficultatem oriri ex neglectâ Trigonometria. Me enim quod attinet, memini me Adolescentem, antequam in familiaritatem KEPLERI penetrarem (quod quidem summæ felicitatis loco habeo & habiturus sum) cum jam tum naturali quodam impetu ad cultum studiorum Mathematicorum raperer, solo hoc nomine impeditum. Sive enim animus me invitabat ad Lectionem PTOLEMÆI, COPERNICI, NONII Salaciensis, TYCHONIS, MESTLINI & aliorum; sive ipsemet vires libraturus Circinū & Regulā tentabam: nusquam mihi sufficiebam. Ex unâ parte videbam citari REGIOMONTANUM & THEODOSIUM, qui iterum cum reliquis ad EUCLIDEM respiciebant: ex alterâ, nec hunc in promptu habebam, ob concisiores privata rei rationes, nec è tam ubere mese Propositionum



num ipsius, quæ ad meam famem sedandam spectabant, depromere poteram; inprimis cum Mihi alij studio destinato, his non nisi per ocium & sine sumtu, vacare liceret: itaq; nullibi non hærebat aqua. Atq; id malum mihi cum alijs, qui simili mecum amore divinisimarum harum scientiarum flagrabant, commune erat.

Quin imò, si qui maximè erant, quos melius Fatum respexerat, eosq; intra adyta Matheseos adduxerat, ij, quæ sciebant, non minus accuratè, quàm aureum vellus, aut sacra Eleusinia servabant, nec sibi nec alijs fideles.

Cum Ego autem illud monitum semper sanctum habuerim, & dignum, quod in omnium oculis sit, quicumq; aut operam suam studijs juventutis formandis locant, aut in arte vel scientiâ quacunq; posteris commodare cupiunt, præfigi debeat:

ἡ δὲ μουσὴν ἀπαπύλα καὶ ἄγγελον, εἶπεν περισσὸν
εἰδεῖν σοφίης μὴ φθονεῖν πλείθεν.

Nolui Ipse hac in parte officio meo deesse: sed eam potius operam dedi, ut, quod olim quasi vovi, id hoc in Libro effectum darem.

Nec est, cur quis Me has meas cogitationes majoris æstimare putet, quam Eorum, qui ante Me de eadem materia scripserunt. Id saltem puto quemvis, qui hæc legerit, intellecturum, me omnia quæ ad Doctrinam Triangulorum in EUCLIDE spectant eo

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consilio

consilio huc contulisse, eâq; methodo, ut qui EUCLIDEM non habet, hinc ea sine anxio delectu depromere: qui habet, mea cum EUCLIDEIS conferre, atq; vel hac ratione, tantò commodius in ijs erudiri queat. Spero, etiam, neminem fore, qui non in Mathematicis absq; Manu ductore per hæc præcepta, modo à Natura mediocri ingenio dotatus sit, & ad Mathesios amorem & cultum invitetur, feliciter auspicaturus & progressurus sit.

Quid porrò in ipsa Trigonometriâ penitioræ præstiterim, num omnia placitura, vel an aliqua compendia Calculi sint adhibita, quæ Trigonometrarum usibus sint aptiora, quàm quæ alias uturpantur, id alijs judicandum relinquo. Ubivis in id incubui, ut perspicuè omnia tractarem, ne legentibus ullibi remoræ iniiciantur. Quod si præstitum, est cur gaudeam.

Erat quidem etiam animus eandem ob causam, & quod sciam ista, quæ à sensibilibus planè abstracta sunt, difficulter vulgo percipi, eadem certis rebus applicare, atq; adeò non planè immateriata proponere: sed excessisset Liber Volumen iustum, & commodius illa ratio docendi adhibebitur in Geometriâ meâ Practicâ & Architectonice Militari, quarum hæc, si DEUS voluerit, sequenti ætate lucem videbit.

Quod deniq; TUÆ SERENIT, nomen Libro huic præfixerim, eundemq; cum debitâ submissione
ad TUÆ

ad TUÆ SERENIT. pedes supplex nunc deponam:
id unicè-debitæ gratitudinis ratio aliter non tulit.
Æquum enim erat, ut, qui ante Novennium à Serenis-
simo & Beneficentissimo, piæ laudatissimæq; menti.
TUÆ SERENIT. PARENTE ex Silesiâ huc evoca-
tus, liberalissimè semper habitus, ab Ipsâ TUÆ SERE-
NIT. Illustrissimo etiam & Cellissimo Principe ac
Domino, Dñ: JOACHIMO SIGISMUNDO Marchione
Brandenburgico, &c. TUÆ SERENIT. Fratres Germano,
plurimis, ijsq; summis & clementissimis beneficijs
maectatus fui, tandem iudicium & testimonium ali-
quod grati animi valvis Eternitatis applicem. Ocium
in primis quasi triennale, quod ex TUÆ SERENIT.
clementissimo indultu hujus Libri conceptui & par-
tui, ab alijs occupationibus liberrimum habui, id
unicè, quod facio, severe extorquet. Sedulitati etiam
meæ, quæ me assiduum & accubuum habuit, noctu &
interdiu, ad cartas meas & has, & quæ propediem in-
sequentur; & laboribus meis, in negociosissimo hoc
ocio necdum triennali, exantlatis, non absq; visus &
virium detrimento, attestabuntur, qui hæc legent,
Viri Boni & hujuscemodi laborum æstimatores æqui:
imò testantur jam in familiaribus ad Me Epistolis
primarij census Mathematici: ut causa planè nulla sit,
cur Me Hic vel Ille ociatum hæctenus fuisse subinnuat.
Probabo TUÆ SERENITATI paulò post & producam
in cla-

in clarum Eruditi Orbis Solem labores Meos, modò
DEUS, uti hætenus, vitam & vires, TUÆ SERENITAS
ocium clementer indulserit.

DEUS ὁ αἰὶ γνωστὸν TUAM SERENIT. Una cum
TUÆ SERENIT. raræ & incomparabilis pietatis &
accuratissimarum Virtutum face toti Orbi Marchico
prælucente compare ELECTRICÆ, & utriusq; sexûs
vernantissimis Serenissimi Thorij conjugalis germini-
bus diu sospitet, superstitet; imò

ἀρετὴν ὁπάσεις
παύσιν, καὶ μὴ κακὸν μεταδήμιον εἶη

Dabam Berlini 9. Kalend. Novembris quo die
TUÆ SERENIT. filius secundò genitus adspergine
Sacrosancti Baptismatis Civitatis Christianæ membrū
se professus, oleoq; gratiæ divinæ inunctus æternæ
SIONIS cum CHRISTO & CHRISTI Fidelibus æterno
imperio adscribebatur: anno gratiæ per CHRISTUM
instauratæ CIO IO CXXIV.

TUÆ SERENIT.

Devotissimus Minister &
Mathematicus

M. BENJAMIN URSINUS.

1
BENJAMINIS URSINI

SPROTTAVI SILESI,
Mathematici Electoralis Bran-
denburgici,

TRIGONOMETRIÆ,

LIBER I.

De Triangulis, eorumq; affectionibus.

SECTIO PRIOR.

De Triangulis Planis.

CAPUT I.

De

TRIANGULIS, EORUMQUE

partibus in genere.

Trigonometria est doctrina de dimensionibus
vel solutionibus Triangulorum.

Est hæc Doctrina nobilissima totius Geometriæ pars, vel
ipsius quædam quasi anima. Quemadmodum enim
Geometria omnes figuras, earumq; symptomata confi-
derat & explicat: ita Trigonometria Triangula à quarum Di-
mensione etiam nomen habet, & in quæ nullæ non figuræ re-
duci possunt, pertractat. Cum itaq; omnes figuræ Geometricæ
aut solidæ sint, aut planæ: solidæ autem ex planis originem su-
am ducant, & in easdem resolvantur: planæ deniq; aut Trian-
gula sint, aut Triangulata, hoc est, figuræ in Triangula reduci-
biles; nemo non videt, Trigonometriam per immensum Ge-
ometriæ, totiusq; adeò Matheseos æquor sese diffundere.
Objectum ejus est solvere vel dimetiri Triangula: quod ni-
hil aliud est, quam in singulas Trianguli partes quam accura-
tissimè inquirere, hoc est, quantum unumquodq; latus; quan-
tus qui-

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tus quivis sit angulus. Ut autem in ipso frontispicio & limine cuiusvis conspicuum sit tantò evidentius, quid hinc peti possit: dicam id, quanquam verbis non meis, sed Clarissimorum Virorum. Autorum, qui ante Me in hoc pulvere defudarunt. Alter eorum est L. Valentinus Otto Operis Palatini Autor, qui in Præloquio ad Lectorem ita ait. *Quod insigniores Mathematici cum veteres, tum etiam recentiores, tantopere in exquirendâ & propagandâ doctrinâ Triangulorum occupati fuerunt, minimè mirum videri debet. Usu namq, & experientiâ didicerunt, banc unam ad nobilissimam Philosophia partem de cœlestium corporum motibus doctrinam aditum aperire, neq, quenguam, nisi cognitione doctrina Triangulorum imbutum, ad divinæ artis intimâ & mysteria penetrare posse: Eum verò, qui huius doctrina expertus & ignarus est, dum Geometricas illas angulorum collationes non potest percipere sapse habere, neq, se expedire posse. Constat enim ad divinâ & dulcissimâ artis Astronomia constitutionem tria requiri; primum Φαινόμενα & μέγεθς: illa sine accuratâ observatione in omnium oculos incurrunt; hæverò tantum solertium artificum sagacitate, ingenio & magno studio, tum etiam instrumentis & sumptibus baud exiguis ad eum usum fabrefactis deprehenduntur. Ab his duobus principijs tota quidem motuum doctrina proficiscitur, sed, ut perficiatur, necesse est, ut Geometria adjungatur. Hac in artis constitutione duplici munere fungitur. Primum Hypotheses concinnas & apparentis anomalie periodis maximè congruentes in medium profert: deinde per Triangulorum doctrinam ex primis illis motuum observationibus ritè inter se collatis & tractatis in omnibus errantibus inquirat & scrutatur loca summa & ima absidis, centrorum distantiam, vel, ut Ptolemaeus loquitur, ἀπὸ γήινου, πρὸς γήινον καὶ ἐκκεντρότητα. Nam sine his duobus administriculis æquabiles & apparentes motus vel horum differentie, nunc addenda, nunc subtrahenda, quas Ptolemaeus vocat ἀεὶ καὶ ἀεὶ τοῖς, discerni prorsus non possunt. Inde apparentem stellæ locum ad quodcunque tempus citra observationem in cælo definimus, &, quod admiratione dignum est, retrò etiam ad aliquod millia annorum, cum omnium Planetarum*

tarum motus, tum etiam Eclipses computare possumus. Sicut verò in
 jam memoratis usus doctrina de Triquetris rectarum linearum cum an-
 gulo recto præcipuè versatur: ita doctrina de Triangulis globi maxime
 conspicitur in Sphæricis, quibus universa doctrina primi mobilis con-
 tinetur. Per hanc enim conficiuntur Canones Declinationum, Ascensio-
 num Rectarum & Differentiarum Ascensionalium; exstruuntur & ca-
 nones Angulorum, quos Ecliptica facit cum Meridiano, cum Horizonte,
 cum Circulis per Verticem transeuntibus, quorum usus etiam ad Eclipsi-
 um doctrinam est necessarius. Per hanc doctrinam etiam cujuslibet
 stella extra circulum, qui per medium signorum est, posita, cujus ta-
 men longitudo cum latitudine fuerit data, Declinatio, Ascensio recta
 innotescit, & cum quo gradu signiferi culminet; & vice versa, quomodo
 his datis illa inveniuntur. Per eandem & dies maximus, Latitudo or-
 tus, Inclination Sphære & reliquæ Differentiæ, crepuscularum quantita-
 tes, incrementa & decrementa demonstrantur. Quin & Canones de
 ortibus & occasibus stellarum tam veris quam apparentibus hujus ope
 conficiuntur. In summa huic doctrina de Triangulis globi debentur o-
 mnes omnium de primo motu Canonum compositiones. Negatamen his
 terminis inclusus & circumscriptus est hujus doctrina usus, sed multò la-
 tius se extendit. Ex hac enim doctrina in Meteorologicis demonstratur,
 summam vaporum distantiam à terra non excedere 12. vel 13. miliaria
 germanica. Per eandem investigatur Cometarum, si quando apparent,
 locus in Zodiaco, latitudo, declinatio, ascensio recta, parallaxis, qua ve-
 rus locus ab apparenti discernitur. Nam absq; hac, certè sententia fer-
 ri non poterit, de Cometar. à centro mundi, centroq; visus distantia, de
 Cometar. diametro tam vera quam apparente & ipsorum corpulentia.
 Estq; summa hujus doctrina laus, quod non basit in exiguis & in his infe-
 rioribus machinis, ut Mechanica, quæ adificia, vasa, aut alia exigua cor-
 pora metitur (etsi & ea exercitatio liberalem continet cognitionem, &
 magnas in vita utilitates adfert) sed evolavit in cælum, & admiran-
 dum mundi opificem & gubernationem ejus nobis monstrat. In hoc opi-
 ficio mundi, metitur corpora luminarium Solis & Luna ac reliquarum

stellarum. Nam Ptolemaeus, Arbasegnius, Copernicus & alij ex inventis
 parallaxi; beneficio doctrinae triquetrorum, ratiocinantur primum,
 quot Semidiametros terra comprehendat intervallum Luna. Deinde
 ex hoc ipso intervallo perquirunt rationem dimetiensium terra, luna &
 umbra: unde simul innotescit terram lunam esse majorem, & figuram
 umbrae terra similem meta ac turbini inverso. Præterea ex his, Solis
 & intervallum & quantitatem deprehenderunt. Non potuissent igitur
 de quantitatis trium corporum Solis, Lunæ, Terræ, & de umbra Ter-
 ræ figurâ aliquid certum definire, nisi hac de Triangulorum doctrinâ admo-
 dum fuissent instructi. Sed & in Gnomonicis hujus doctrinæ usus est,
 quando ex certa Gnomonis ad umbram aut rectam aut versam ratione
 verticis mundi sublimitas investigatur. Et similiter in Geographicis.
 Per hanc enim Eratosthenes, Posidonius & Ptolemaeus Cosmographi, cer-
 tis hypothesibus assumtis invenerunt maximi circuli terræ ambitum con-
 tinere 5400. miliaria Germanica. Hinc & modus regiones terræ habi-
 tata discernendi, & urbium atq; locorum intervalla mensurandi in-
 ventus est. In Opticis etiam & Catoptrici per hanc doctrinam angulos
 & reflexionis & refractionis, atq; id genus alia scrutati sunt. Hacten-
 us operis Palatini Autor: quæ verba suo etiam Triangulo-
 rum Sphæricorum Canoni Adriani Romanus Mathematicus
 Herbipolitanus laudatissimus præfixa voluit. Is verò Romanus
 alter etiam est, cujus Encomium Trigonometriæ nostræ præli-
 minare esse volumus. Ita enim ille in dicto libro post dedica-
 torias ad Electorem Coloniensem Ernestum. *Usus Triangulo-
 rum immensus est, cum eorum beneficio comparentur inter se rerum lon-
 gitudines, latitudines, profunditates, planities, soliditates, motus, tem-
 pora; moventium ac machinarum quarumcunque dignoscuntur vires, di-
 riguntur, in scopos oppositos; moles etiam vastissima loco suo cedere co-
 guntur, atq; vel subra altissimos attolluntur montes; aquæ librantur &
 abducuntur; scala vallis apponuntur hostilibus, cuniculi fodiuntur, in-
 strumenta muris hostium difficiendis construuntur idonea, lapidibus,
 ferramentis, alijsq; consimilibus obruntur hostes; flumina apta ad eam*
 vertuntur.

*semconstruendis machinis trahuntur; arces & civitates ordinatè con-
struuntur, eademq; defenduntur & oppugnantur; peregrinantes terrarū
maria, diriguntur, naves etiam in vastissimo pelago, ut à scopo propo-
sito non deviant, coercentur & gubernantur; domus navesq; constructis
ad eam rem idoneis speculis è longinquo incenduntur. Per trian-
gula quoq; opera fiunt, non vulgo tantum, sed doctis admiranda; dum re-
rum diversarum simulacra per medium conclavè ambulare, sibiq; mutui-
as manus porrigere, tandemq; & inter se configere ostenduntur, adeo
ut demonum illusionibus similima, etiam viros doctos & constantes non
raro terruerint. Eisdem etiam Triangulis quiesca ostenduntur accede-
re, recedere, ambulare, saltitare, volare; formosa apparent difformia,
recta verò inversa, vel curva simpliciter aut multipliciter, plana autem
jam concava, jam convexa. Hæc Romanus etiam. Ex quibus vel
cæco apparet, quod olim Plato Academiæ foribus inscripsit:
οὐκ ἔστιν ἀγνοῦν τέχνης εἰσὶν αὐτοῖς: id aureum plane monitum quidem ef-
fe Philosophi, ad verioris & penitioris sapientiæ sectatores:
inprimis verò usurpari hodie posse de Trigonometria, ut quæ
unica τῆς μαθητικῆς λατρεῖς sit, eaq; genuina planè & germana. Abat-
tendi enim merito essent, qui hodie in divinæ Matheseos adyta
irrumperere solent, sine accuratiore hujus partis Geometriæ
cognitione, per decretum vel Platonicum: οὐκ ἔστιν ἀγνοῦν τέχνης
εἰσὶν αὐτοῖς; vel Xenocraticum, quo exesse juberentur, qui ab
hac Matheseos ansâ minus instructi sunt. Sed sufficiant hæc, è
quibus Lectori insignis Trigonometriæ usus, modò quis in cla-
rà luce nolit planè cœcutire, maximè perspicuus esse potest.*

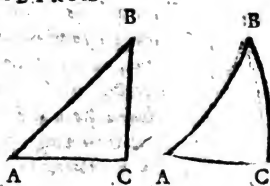
**Triangulum est figura comprehensa tribus
lateribus.**

Pauciores enim quam duæ lineæ rectæ spacium in plano
non concludunt. Unde merito Triangulum Rectilinearum fi-
gurarum Prima dicitur. Nec obstat, quod aut una linea circu-

A 3

laris

lares vel duo arcus se mutuò apprehendentes spacium comprehendant. Sermo enim hic est de Triangulis, quales sunt figuræ duæ appositæ ABC, quæ singulæ lateribus AB, BC, CA, comprehenduntur.



Partes Trianguli cujusvis sunt sex : tria Latera & tres Anguli.

Sic Figuræ priores, præter latera prius recensita, habent etiam tres Angulos, nimirum angulum BAC, qui à lateribus AB & AC includitur, vel utriq; adjacet; Angulum ABC, quem latera AB & BC; & deniq; Angulum ACB, quem latera AC & BC ambiunt.

Notetur hic obiter etiam, nos, more Mathematicis usitato, in sequentibus Punctum aliquod unicâ literâ; Latum vel lineam duabus, quarum sc. una ejus initio, altera fini sit adscripta; Angulum deniq; tribus definituros, quarum una sit in concursu utriusq; lineæ Angulum constituentis, sive in communi initio utriusq;, reliquæ duæ in utriusq; fine. Ut cum dico, Angulum BAC fieri concursu laterum AB & AC, in communi concursus puncto A. Monendi itaq; in principio Lectores, ne Angulor. & Laterum conjunctas, vel potius conjungendas, lateras, commatibus aut punctis interstinguant.

Triangulum verò omne est vel Planum vel Sphæricum.

Ratione nimirum subjecti, in quo aut concipiuntur à mente humanâ, aut à naturâ ipsâ depinguntur.

Triangulum Planum est, quod in Plano aliquo describitur.

Talia Triangula sunt, quæ in Altitudinum & Distantiarum mensu-

menfuratione occurrunt, quorumq; ufus eft in Architectonica Militari, in Opticis, &c.; talia etiam Triangula quotidie fieri videmus à Gnomonibus in Horologijs Sciothericis Planis, & à corporibus noftris, in quibus Gnomon perpendiculariter erectus, aut corpus humanum, eorumq; umbræ vicem cruris minoris majorisq; fubeunt; radius verò à latere Gnomonis vel Hominis ad Terminum ufq; Umbra, Hypotenusam notat.

CAPUT II.

De

LINEIS RECTIS; EARUMQUE

mutuis concurfibus.

Laterà Trianguli Plani funt Lineæ Rectæ.

Lineæ Rectæ funt tales lineæ, quæ ex æquo & directè protenduntur inter fua extrema.

OMnes fpecies linearum hic percenfere & fupervacuum & ineptum effer, cum Trigonometria tota non nifi rectas & circulares agnofcat fuas; illas pro Planis, has pro Sphæricis Triangulis. Reliquæ ergò jure fuo aliò ablegantur, unà cum Definitionibus harum, quæ varia apud Autores funt, & à Clayio in Commentarijs Euclidæis fatis exquisitè recensentur, unde, qui harum rerum cupidus eft, eas pètat. Mihi hæc defcriptio lineæ Rectæ captui cujusvis fatis videtur commoda. Dùm enim directam inter extrema puncta protentionem urgeo, removo omnem, citra vel ultra, fupra vel infra illam directionem, delirationem & exorbitantiam. Inftrumentum verò pro ejusmodi directo lineæ ductu ab artificibus excogitatum eft id, quod Regulam vel Amuffim vocamus, quo & Mechanici vulgò ferè omnes utuntur. Hujus fabricam, & quomodo examinari debeat, num rectè ad ufus præparatum fit, oftendit idem Clavius. Ejus vicem in agrimenforiâ quid fuppleat,

pleat, inq; castrorum metatione, docetur satis fusè in Hypomnematibus Mauritianis, apudq; Schvnterum: in Euthymetricis etiam meis idem propediem monebo.

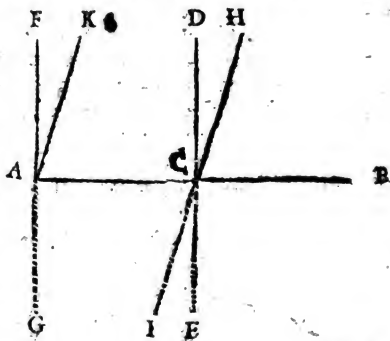
Lineæ Rectæ ducuntur vel ad mutuos concursus, vel ad Parallelismum.

Linearum Rectarum concursus mutuus est vel coincidentiae vel intersectionis.

Uterq; concursus est vel ad Perpendicularum, vel Fortuitus.

Quomodo duæ lineæ sibi mutuò ad Perpendicularum incidant, vel una alteri Perpendicularis sit, id quidem Mechanicis notissimum est, qui Instrumenta habent, quorum beneficio vel ineptissimo Rustico id demonstrare possunt: qualia sunt, quod Alpharium vulgò dicitur, die Grund oder Bleywaage, Gnomon, der Winkelzettel etc. inde tamen id etiam cuivis perspicuum est, cum lineæ lineæ ita incidit, ut altera neutri alterius, cui incidit, parti annuat aut abnuat, cujus rei Cœmentarij argumentum sumunt à perpendicularo, von dem Bleygerichte.

Exempli gratiâ, quia in Lineam A B, Linea D C in puncto C incidit ita, ut nec ad A nec ad B inclinēt, sed ab utroq; æquabiliter abnuat, dicitur lineæ D C, lineæ A B perpendiculariter inlittere vel cū eadem ad perpendicularum concurrere.



Coin

Coincidentia & Intersectio duarum linearum ad perpendicularum fit, vel in certo puncto lineæ ductæ, in quod linea ducenda vel incidere, sive per quod transire debet: vel à puncto extra lineam ductam, ex quo ducenda aut ductæ incidere aut eam intersectare debet.

Utrumq; punctum sive intra sive extra lineam ductam detur, ad quod vel ex quo ducenda duci debet, est vel inter extrema ductæ, vel in aut super alterutro extremorum ejusdem.

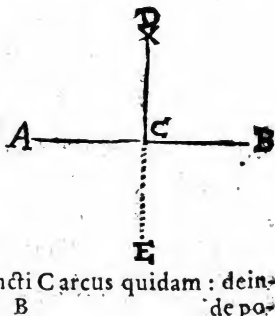
Punctum inter extrema ductæ est vel in aut super ipso medio, vel inter medium & extremum alterutrum.

De omnibus hisce casibus teneantur septem sequentia Problemata;

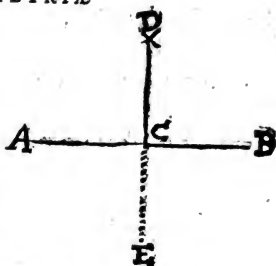
PROBL. I. *Quomodo, datâ aliquâ lineâ rectâ, alia duci debeat, quæ data in puncto ejus medio perpendiculariter insistat, vel per eandem ibidem etiam transeat.*

Declaratio Problematis. Ad lineam AB schematis ducenda est linea DC quæ illi in puncto medio C perpendiculariter insistat, aut Linea DE quæ eandem in C puncto ad perpendicularum intersectet.

Praxis. In extremitatum lineæ AB utralibet, puta A, posito Circini pede immobili, describatur ad D supra lineam, ex opposito puncti C arcus quidam: dein de po-

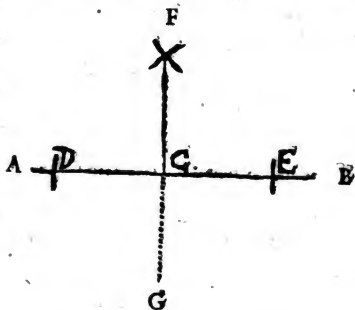


de posito circino in B describatur eadem Circini pedum distantia alius arcus priorem in D puncto interfecans. Punctum D cum C connexum dabit lineam D C quæ datæ lineæ A B perpendiculariter insistit : eadem D C continuata, exhibet lineam D E quæ datam A B perpendiculariter interfecat, ex mente Problematis.



PROBL. II. Quomodo eadem lineæ duci debeant, si punctum C non fuerit exactè medium, ut prius.

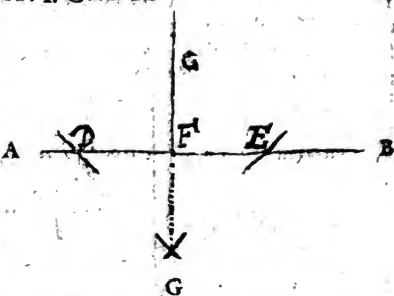
Si C non fuerit punctum lineæ A B medium, posito Circino in C, abscindantur utrimq; æquales partes per arcus D & E : deinde ponatur Circinus in D primò, postmodum etiam in E, & describantur iterum, ut in proximo Probl. supra lineam duo arcus in F sese mutuò interfecantes. Ita Lineæ F C & F G continuatæ erunt iterum eæ, quæ duci debebant.



PROBL. III. Quomodo lineæ eadem haberi possint, si punctum C extra lineam A B detur.

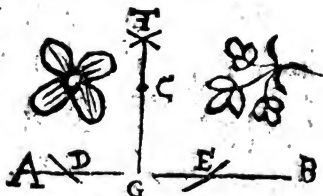
Dato puncto C extra lineam A B ex quo & insistens & interfecans perpendiculariter duci debet : pone Circinum in C & duc duos arcus D & E lineam A B in punctis D & E interfecantes,

canres, ex quibus si describeris ad G infra lineam duos arcus, punctumq; intersectionis eorum cum puncto C conjunxeris, secabitur data linea A B per lineam C G in puncto F perpendiculariter; qualiter etiam linea C F eidem datæ A B insisteret.



PROBL. IV. *Quomodo C F linea insistens duci nihilominus debeat, si infra lineam non detur spacium pro intersectione arcuum ad G.*

Tum descriptis ex C puncto, ut prius, arcibus D & E in linea A B, describantur porro ex punctis D & E supra lineam A B (infra vel supra punctum C datum id fiat, perinde est) duo arcus sese mutuo in puncto F intersecantes: insisterq; linea F G datæ A B iterum perpendiculariter.

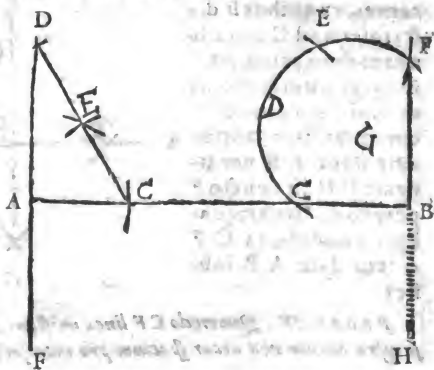


PROBL. V. *Quomodo datâ aliquâ lineâ, alia duci debeat, quæ aut cum priori coincidat, aut per eam transeat perpendiculariter, in puncto, dato in alterutro datæ lineæ extremo.*

Si linea data continuari posset: fieret id post continuati-
onem factam per antecedentia. Sed quia non semper hoc da-
tur, succedant duo sequentes modi:

- I. Sit in lineæ A B punctum A ducenda perpendiculariter
B 2 vel in-

vel incidēs vel transiens, posito Circini pede immobili in punctum A, abscindatur ex linea data segmentum A C per arcum C : deinde ex punctis A & C distantia A C ducantur bini arcus sese mutuò in E interfecantes, & ex E alius, quasi supra punctum A directè, videlicet arcus D :



tandem linea obscura ducta per C, E & D transibit per arcum D in puncto D : ex quo ad A ducta linea recta incidet in datam AB perpendiculariter : siq; ulterius continuetur usq; ad F, habebitur & altera per datam AB perpendiculariter transiens.

2. Vel : si cui hic modus minus placeat, usurpetur iste, cujus exemplum apposui in datæ lineæ AB extremo altero, nimirum in puncto B, in quod si posueris circini pedem alterum, alterum verò traduxeris in punctum G vel quodcunq; aliud ibidem loci, exq; eo puncto G distantia GB describeris segmentum Circuli I D E F intersecans lineam datam in puncto I & H distantiamq; GB vel GC per D & E ad F usq; tunc transposueris : ducta linea FB erit insistens ; eademq; continuata usq; ad H transiens perpendiculariter : itidem ut prius.

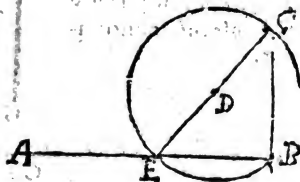
PROBL. VI. Si porro punctum, per quod quæsitæ linearum utralibet transire debet, fuerit directè supra datæ lineæ extremum alterum, quâ methodo tum insitui debet illarum ductus?

Sit li.

Sit linea data AB & C extra eam punctum, ex quo perpendiculares ad extremum lineæ punctum A delabi debent. Si linea data versus partes A puncti protrahi posset, res ex superioribus sese bene haberet: sed negatur etiam hic continuatio. Pone ergo pedem circini alterum in punctum C datum, & cum altero duc duos arcus quoscunq; D & F , distantijs CD & CF quibuscunq; secantes lineam AB in punctis D & F : deinde describe ex D distantia CD , item ex F distantia CF duos arcus infra lineam directè sub puncto C , intersecantes se in puncto E : tandem connecte puncta C & E per rectam lineam, habebisq; CA incidentem & CE secantem perpendiculariter, &c.

PROBL. VII. *Quid deniq; tum inceptandum, cum infra lineam AB pro arcubus ad E nullum spacium superest?*

Ex C puncto ducatur linea CE ad datam AB quomodo-cunq;, cuius dimidium Circini apertione & compressione quære donec invenias (quomodo id bisectionis punctum $\pi\chi\mu\alpha\varsigma$ quæri debeat, docebimus suo loco *cap. VII.*) in D , in quo posito circino, describe segmentum circuli, distantia DC vel DE , quod necessario lineam AB versus partes B alicubi propè B secabit: id sectionis pun-

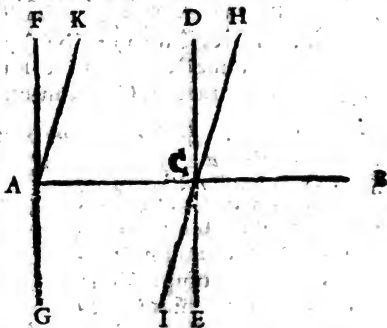


nis punctum si cum C junxeris habebis lineam CB, quam
quaesivisti, ad AB lineam perpendicularem.

Ceterum omnis vis horum Problematum in eo consistit, ut, cum ad duorum linea recta ad minimum requirantur duo puncta, per quae illa duci possit, dato eorum uno intra vel extra lineam, alterum habeatur. Unde manifestum sit & evidens, cum in omnibus recensitorum Problematum casibus necessario aut detur punctum alterutrum aut certe a nemine non merito postuletur, omnem curam reliquam impendendam esse ad inventionem reliqui: sive id fiat per modos jam enumeratos, sive per quoscunque, alios.

Concursus Rectarum ad coincidentiam vel intersectionem fortuitus, est quando linea cum lineâ quomodocunq; (modo non perpendiculariter) aut coincidit, aut eandem trajicit.

Ejusmodi fortuito
concursu coincidunt
lineæ FA & KA, DC
& HC, KA & AC, HC
& AB: intersecant se
etiam mutuò HI &
AB, item lineæ DE &
HI infernè continu-
ata.



C A P. III.

De

LINEARUM RECTARUM

Parallelismo.

Parat-

Parallelismus linearum est, cum duæ pluresve Lineæ Rectæ ita decurrunt in uno eodemq; Plano juxta se mutuò, ut æqualiter ubiq; distent, & quamvis in utramlibet partem producantur, nunquam convenient, etiamsi ea productio continuetur in spatium planè infinitum.

Ipsæ verò lineæ Rectæ ita decurrentes vocantur Parallelæ vel mutuò omnibus suis partibus Æquidistantes.

Tales sunt lineæ quatuor appositæ AB, CD, EF, & GH, quæ ita ponè semutuo decurrunt, ut nullibi altera alteri annuar, & si maxime vel versus partes A, C, E, G vel versus B, D, F, H producantur ulterius, impossibile est, ut aliquando concurrant: æquabilis enim illa singularum partium unius à singulis partibus alterius distantia, etiam in ulteriori productione linearum ad partes adnascens transfertur.

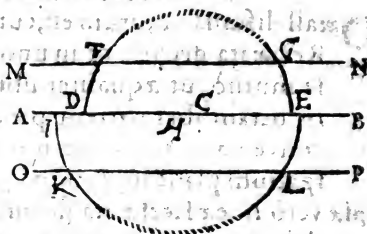
Harum Linearum teneatur & ducendi ratio & proprietates quædam.

Linearum parallelarum ductus docebunt Problemata duo sequentia.

PROBL. I. Quomodo data linea Recta Parallela duci debeat quomodocumq; absq; puncti certæ determinatione.

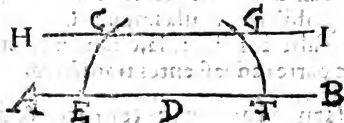
Sit lineæ datæ AB ducenda Parallela aliqua distantia quacunq; : nullum enim datur punctum, per quod Parallela transire de-

ire debeat. Posito circini pede immobili in punctum lineæ datæ quodcumq; (exempli gratiâ) in C, describatur vel semicirculus D F G E vel duo saltem arcus quicumq; D F, & G E secantes lineam datam in punctis D & E: deinde sumatur in arcu altero punctum quodvis, puta F & ex arcu altero abscindatur arcus E G æqualis arcui D F: linea M N per puncta F & G transiens erit datæ A B Parallela. Eadem ratione describitur & infra lineam A B ex centro H semicirculus vel arcus I K & E L, & per puncta K & L arcum I K & E L æqualium trajicitur Linea P O Parallela datæ A B.



PROBL. II. Quomodo data linea Recta Parallela duci debeat per punctum datum.

Processus idem est, qui prior: datur A B & punctum C: posito Circino in D, ducantur arcus E C & G F, quorum ille per C punctum transeat, uterq; autem lineam A B secet in punctis E & F; traductâ distantia E C in E G, trajectâq; lineâ per puncta C & G erit H I lineæ A B parallela, decurretq; simul per datum punctum C.



De Affectionibus Linearum Parallelarum sunt sequentia VIII. Theoremata:

I. Linea Parallela intelligantur in eodem Plano esse: vel in eadem superficie.

Sic.

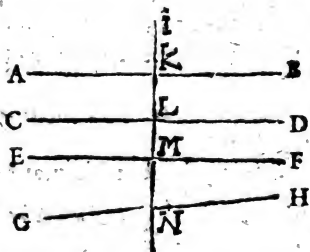
Si enim altera sit in subiecto plano, altera in sublimi, accidet quidem, ut non coincident: non tamen erunt parallelæ.

II. Recta connectens rectas Parallelas est in earum etiam plano.
per 7. XI.

Cum enim ipsæ Parallelæ, quatenus Parallelæ sunt, non nisi in uno plano esse debeant, utiq; & linea, quæ in omnes incidit quomodocunq; easq; connectit omnes, in earum vel in eodem cum ipsis plano erit. Exempla abundant in Theorematibus sequentibus.

III. Parallelismus duarum pluriumve linearum dyndicatur ex communi omnium perpendiculari.

Si enim linea quæ uni Parallelarum perpendiculariter insistit, producta, etiam ad secundam & tertiam, &c. Perpendicularis fuerit: Parallelæ erunt omnes ex lineæ, ut videre est in lineis AB, CD, & EF, quas ideo parallelas sibi invicem iudicamus, quia Linea IN, quæ

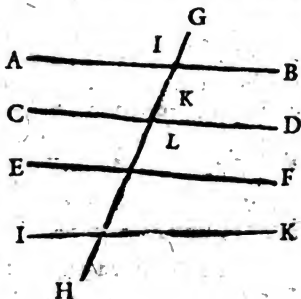


lineæ AB perpendicularis est in puncto K, est etiam talis lineæ CD in puncto L, & lineæ EF in puncto M. Secus fit in lineis EF & GH in quarum illam IN quidem in puncto M perpendiculariter incidit, sed continuata usq; ad N in lineam GH jam non perpendiculariter, sed fortuito incidit: unde concludimus, eas non esse parallelas, sed ex altera parte ad partes F & H mutuo sibi annuere, atq; si produceretur ulterius, tandem ad intersectionem mutuam concursuras: ex altera autem parte ad E & G sibi mutuo abnuere, & licet in infinitum producerentur, nun-

tur, nunquam coituras, sed ad maiorem hiatum semper discessuras.

IIII. Parallelismus etiam duarum plurimumve linear. arguitur ex communi, intersectione quacung.

Quemadmodum ex communi perpendicularo : ita & ex lineâ quâcunq; aliâ, si secundam & tertiam ita secat ut primam, Parallelismus linearum cognoscitur. Sic linea GH secet lineam CD, & lineam EF ita, ut lineam AB : Ergo omnes tres sunt Parallelæ. Eadem autem GH, quia lineam IK non ita secat, ut lineam EF, arguit iterum, eas non esse Parallelas.

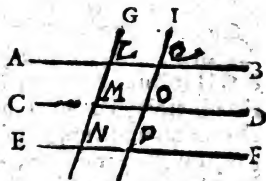


V. Si recta primam Parallelarum secuerit, secabit etiam secundam, & reliquas.

Res ex prioribus schematibus satis est manifesta.

VI. Si recta linea in Parallelas eadem ratione incidentia incidant, & ipsa erunt Parallela.

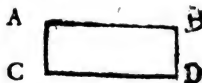
Tum enim lineæ LQ, MO, & NP quibus lineæ incidentes mutuo distant, itidem æquales inter se sunt, ut LM, MN, vel QO & OP quibus datæ AB, CD & EF inter sese distant.



VII. Recta linea, quæ æquales & Parallelas lineas ad partes easdem connectunt : & ipsa æquales & Parallela sunt.

Sic Re-

Sic Rectæ AC & BD connectunt rectas AB & CD; AC quidem ad partes A & C, BD verò ad partes B & D: Ergo & ipsæ æquales sunt & invicem Parallelæ.



Atq; ideò quidem sunt æquales, quia sunt distantia æqualium Parallelarum: Parallelæ sunt, quia Parallelæ aliæ æquales, earum sunt distantia,

VIII. Si Parallela Parallelas connectant, erunt oppositæ lineæ æquales.

Veritas manifesta est ex proximè priori Theoremate.

CAP. IV.

De

ORTU ANGULORUM, EORUNDemq; speciebus.

Concurfus duarum linearum mutuus, de quo hactenus egimus, etsi spacium nondum concludit, sed hiatus saltem aliquem facit, ad Angulorum tamen, quos & ipsos partes diximus Triangulorum, doctrinam nos invitat.

Anguli enim in genere fiunt in linearum illo mutuo concursu.

Cum enim Linea cum lineâ ita concurrat, ut in puncto incidentiæ per eam non transeat, ad punctum illud incidentiæ necessariò fiunt duo anguli quicumq;

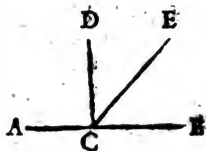
liq; vel Recti vel Obliqui.

Anguli Recti sunt, qui tum fiunt, quando linea una in alteram

C :

alteram directè & perpendiculariter incidit, ita ut neutri parti ejus lineæ, cui incidit, annuat aut abnuat.

Exempli gratiâ, quia in lineam AB lineæ DC in puncto C perpendiculariter incidit, ita, ut nec ad A, nec ad B inclinetur, sed ab utroq; æqualiter abnuat, erunt Anguli duo ACD & DCB, qui ex harum linearum concursu facti sunt, invicem æquales, atq; ideo dicuntur *Anguli Recti*.



Obliqui Anguli sunt Rectis vel majores vel minores, quorum illi dicuntur, Obtusi, hi Acuti : suntq; cum lineâ incidens non directè, & perpendiculariter, sed fortuito & oblique in alteram incidit.

Ita lineæ CE in lineam AB incidit, ut eidem non, ut prius lineæ DC, perpendiculariter insistat, sed versus B ad eam inclinetur, eidemq; ad partes puncti B annuat : unde & Anguli, qui fiunt, non jam æquales & Recti, sed inæquales sunt, & *Obliqui* dicuntur ; Angulusq; quidem ACE, qui Recto ACD major est, dicitur *Obtusus* ; ECB, qui eodem Recto minor est, *Acutus*.

Qua parte verò Obtusus Angulum Rectum superat, aut Acutus à Recto superatur, ea pars, respectu Obtusi, vocatur Excessus supra Rectum, respectu Acuti, Complementum ad Rectum.

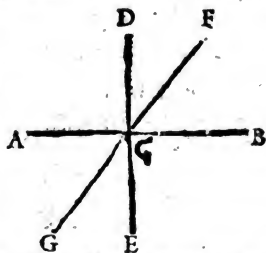
In priori schemate Anguli ACD & DCB (*per superiora*) sunt Recti : ACE verò Obtusus & ECB Acutus. DCE ergo angulus quo Obtusus ACE Rectum ACD superat, dicitur ejusdem Obtusi ACE Excessus supra Rectum : quemadmodum & idem

& idem D C E angulus, quia acuto E C B deest ad Rectum, dicitur ejusdem Acuti E C B complementem ad Rectum.

Quod si autem linea incidens, per alteram, cui incidit, transeat, efficiuntur quatuor Anguli, ijq; iterum vel omnes æquales, adeoq; Recti, vel omnes inæquales, adeoq; Obliqui.

Si Obliqui fuerint, talis erit ipsorum mutua dispositio, ut Obtusi verticibus suis, Acuti etiam suis se attingant.

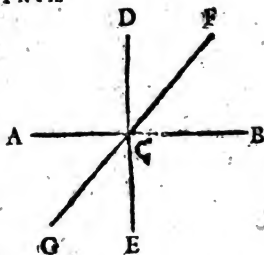
Hanc dispositionem Angulorum ejusdem speciei dicunt Græci fieri κατὰ κορυφῶν, id est, ad verticem, quod nempe Anguli ejusdem speciei capitibus seu verticibus suis se mutuò quasi feriant. Dicuntur etiam ijdem Anguli per crucem sibi oppositi. Verbi gratiâ in schemate adjecto incidit linea D E in lineam A B, ita, ut quatuor angulos transitur suò per eandem in puncto C faciat, omnes æquales, atq; ideò Rectos, nimirum A C D, D C B, B C E & E C A. Linea verò F G per lineam A B transiens in puncto C ad idem punctum quatuor angulos inæquales facit; A C F quidem & B C G Obtusos κατὰ κορυφῶν positos; F C B verò & G C A Acutos & ipsos verticibus contiguos.



Quotcunq; autem Anguli circa unum aliquot punctum descriptum fuerint, ij omnes simul sumti, quatuor tantum Rectis æquantur.

In proximo Schemate incidit in lineam A B eamq; transit,
C 3 præter

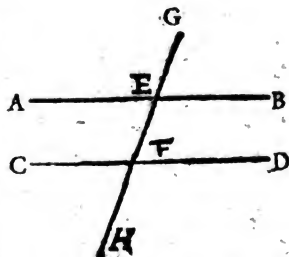
præterperpendicularem DE, etiam
linea FG in eodem puncto C. Ea
circa id punctum plures quidem
angulos facit, ijs quatuor, qui pri-
us erant: sed ij omnes simul sumti
æquantur quatuor saltem Rectis.
ACD enim & BCE (*ex superioribus*)
constat Rectos esse; angulum etiam
DCF anguli FCB complementum
ad Rectum: unde necessariò Acuti



DCF & FCB æquantur ipsi Recto DCB: uti & ex eadem ra-
tione Acuti ACG & GCE referunt Rectum ACE. Sex ergò
Anguli, qui circa punctum C circumstant, quatuor tantum
Rectis sunt æquales. Idem fieret, si per punctum C plures line-
æ transirent.

Linea deniq;, quæ in alias duas Parallelas incidit, easq;
transit, & eadem in utroq; transitus puncto faciet,
quæ prius dicta sunt, & præterea in spacio à Paralle-
lis comprehenso, angulos, quos Græci *ινάδαξ*, sive
hinc atq; hinc, vel alternatim fieri dicunt, æquales
efficiet.

In lineas AB & CD Parallelas
incidat tertia GH quæ illas in pun-
ctis E & F secet. Quales sint Angu-
li circa punctum E aut F (*ex supe-
rioribus*) manifestum est. In hoc
autem Theoremate saltem consi-
derantur & conferuntur anguli in-
tra Parallelas constituti, nimirum
AEF, BEF, CFE & DFE Ex his
1. AEF & EFD: 2. BEF & EFC



dicunt-

dicuntur *ἰσάμει* positi, ideoq; æquales esse, ille illi : hic huic : suntq; illi Acuti, hi Obruſi.

CAPUT V.

De

ANGULORUM QUANTITATE.

Angulorum Quantitas habetur ex iisdem Principijs, è quibus orti prius sunt, & unde in Qualitatis eorum cognitionem pervenimus.

Qualitatem angulorum voco id, quo Angulum aliquem prius diximus vel Rectum vel Obliquum : idq; facio docendi tanto dilucidius causā. Quando enim in has Angulorum species inquirō, interrogō Qualisnam hic vel ille Angulus sit. Sed quando de mensurā vel valore Angulorum sollicitus sum; aut quos graduum angulorum aliquis sit; tū jam non quærō Qualis; sed Quantum is Angulus sit, de quo quæritur : atq; id voco Angulorum Quantitatem.

Ex superioribus perspicuum verò est, si linea in lineam incidit, per eamq; transit, quatuor angulos fieri, eosq; aut Rectos aut Obliquos : si verò linea in lineam incidens non transeat per eandem, fieri duos Angulos, eosq; iterum vel Rectos vel Obliquos.

Utut sit

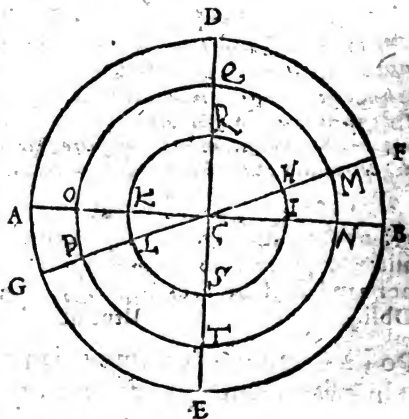
Posito Circini pede immobili in punctum intersectionis vel incidentiæ, descriptoq; altero pede mobili circulo magnitudinis convenientis : is Circulus dividetur in quatuor partes, easq; vel æquales, si scilicet Anguli à dictis lineis comprehensi omnes Recti fuerint; aut inæquales, si Obliqui : atq; hoc fit in eo casu, quando lineæ sese interfecant.

In altero casu, ubi linea in lineam tantummodo incidit, di-

dit, dividetur semicirculus ex incidentiæ puncto descriptus in duas partes; easq; iterum vel æquales ob Angulos Rectos, vel inæquales, ob Angulos Obliquos.

Omnis autem Circulus, ab ultimâ retrò antiquitate quantalibet magnitudinis, assumtus semper fuit, ac si divisus esset in partes æquales 360.

Quæ tamen partes in majori Circulo sunt majores, in minori minores: ita nimirum, ut quanta seu quota minor pars minoris Circuli est de toto suo minore Circulo, ejus pars est: tanta vel tota etiam est major pars de majore suo Circulo. Ut in appposito schemate, quâtus vel quot partium est arcus HI Circuli minimi: tantus vel tot partium est & arcus MN de medio



& FB de maximo. Ratio est quia hi tres Circuli, utut sunt inæquales, sunt tamen similes: quam suorum Totorum naturam etiam Partes vel arcus jam nominati sequuntur. Aliàs circulorum æqualium arcus totidem numero partium, etiam æquales sunt.

Et si autem initio liberum & arbitrium fuerat Mathematicis cir-

fictis circulum in quocunq; partes secare : elegerunt tamen sectionem ejus potius in 360. partes, tam ortus quàm usus ratione. Oritur enim hic numerus ex senario sexies in Denarium ducto. Senarius verò Numerus Numerorum Perfectorum primus Astronomis in primis omnium est familiarissimus, ut hunc & pauculos ex his progenitos quis Numeros Astronomicos merito dicere possit : itidem ut Quinarium Naturæ & Septenarium Sacris familiarem. Usus verò Numeri 360. immensus est, adeò ut etiam vix liceat cum extremo digito attingere. Quivis tamen vel inde cum æstimare potest, quod ex ijs etiam, qui eo majores sunt, ne quid dicam de minoribus, vix aliquis reperiat, qui tot divisiones admittat. Est enim per 2. in 180 : per 3. in 120 : per 4. in 90 : &c. & contra, dividuus, ut ex adjuncta Divisorum Quotorumq; reciproca combinatione videre est : ubi 22. Divisores, totidemq; reciproci Quoti inveniuntur : quod præter hunc nullus alius tam angustus & succinctus numerus præstiterit. Unde nemo non videt ad Calculum Mathematicum, potissimum verò Astronomicum, nullum numerum aptiorem esse. Nec causa est, cur credamus, antiquissimos Astronomos pro re natâ vel Circulum vel Circuli Quadrantem secuisse : quin potius nugæ agunt, qui id adstruere nituntur. Breviloquentiæ enim Veteres studiosi, per primos potius, quam per compositos numeros loqui malebant : quod hic obiter ut moneam, non puto me nullam causam habuisse.

Divis.	Quoti.
1	360
2	180
3	120
4	90
5	72
6	60
8	45
9	40
10	36
12	30
15	24
18	20
Quoti.	Divis.

Unde Semicirculi mensura sunt gradus 180.

Idq; tam in Semicirculo ADB maximo, quam OQN mediocri & KR I minimo.

D

Facile

Facile etiam hinc apparet, siue in primo casu totus Circulus in quatuor; siue in secundo dimidius in duos Quadrantes fuerit diuisus, arcum 90° graduum vel Quadrantem Circuli esse Mensuram Anguli Recti.

Ita arcuum AD, DB, BE, EA in circulo maximo: OQ, QN, NT, TO in mediocri; KR, RI, IS, SK in minimo; qui omnes angulos Rectos $ACD, DCB, BCE, \& ECA$ metiuntur; quilibet est graduum 90 .

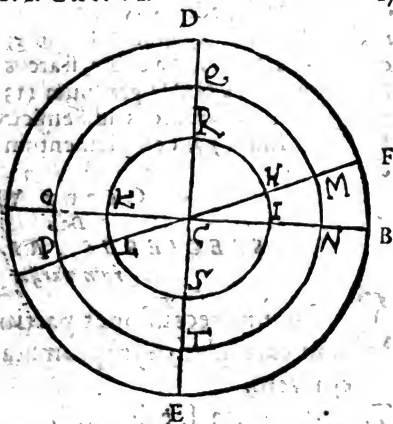
Si verò vel Circulus vel Semicirculus non in Quadrantes, sed in inæquales partes fuerit sectus, non minus perspicuum fiet Anguli Obtusi mensuram esse Arcum 90 gradibus maiorem (180 tamen gradibus minorem): Anguli verò Acuti, arcum 90 gradibus minorem.

Sic arcus $AF, OM \& KH$ qui mensurant Angulum Obtusum ACF , sunt arcus Quadrante vel 90 gradibus maiores: $EB, MN \& HI$ verò, qui acutum FCB mensurant, sunt Quadrante vel 90 gradibus minores.

Hinc & hoc sequitur; Complementa Arcuum esse, ut prius Angulorum: ut nempe is arcus, quo arcus Quadrante maior excedit Quadrantem, Excessus supra Quadrantem: is verò, quo Arcus Quadrante minor à Quadrante deficit, Complementum ad Quadrantem dicatur.

Sic arcus DF, QM, RH , quibus arcus AF, OM, KH majores sunt Quadrantibus AD, OQ, KR dicuntur Excessus Arcuum

cuum AF, OM, KH
supra Quadrantes AD
OQ, KR : ijdem etiā
arcus DF, QM, RH
quibus arcus FB, MN,
HI à Quadrante defi-
ciunt, dicuntur Com-
plementa arcuum FB, MN, HI ad Quadran-
tes DB, QN, RI. Ut si
arcus FB, MN, HI fu-
erint 23. graduū ; sub-
tractis ijs à 90. gradi-
bus seu à Quadranti-
bus DB, QN, RI, re-
manebunt arcus DF,



QM, RH 77. graduum, qui illorum complementa sunt ad Quadrantes dictos. Si verò arcus AF, OM, KH dati fuerint 167. graduum, & ab ijs 90. gradus seu Quadrantes AD, OQ, KR subtrahantur, remanebunt arcus DF, QM, RH 77. graduum, qui Majorum illorum Excessus supra Quadrantes dicuntur.

Ex quibus tandem etiam patebit, quid sint Complementa Arcuum ad Semicirculum & Angulorum ad duos Rectos : item Excessus Arcuum supra Semicirculum vel Angulorum supra duos Rectos.

Quæ enim prius ratio & quis respectus erat Excessuum & Complementorum ad Quadrantes & Angulos Rectos : idem hic est ad Semicirculum vel ad duos Angulos Rectos. Si enim detur arcus Semicirculo major GDB vel aggregatum aliquod graduum 203. duobus Angulis Rectis majus; demto Semicir-

culo ADB vel gradibus 180 : erit arcus AG Excessus supra Semicirculum dictus : gradus autem 23. erunt Excessus supra duos Angulos Rectos. Ita etiam, si arcus GD Semicirculo minor sit, vel Angulus GCD graduum 113, erit arcus DF complementum illius dati arcus ad Semicirculum : Angulus autem DCF graduum 77. complementum anguli dati ad duos Rectos.

CAPUT VI

De

SPECIEBUS TRIANGULORUM
varijs.

Sic fuerunt recensiones partium Trianguli, & quædam earundem Symptomata : sequuntur species ejusdem.

Triangulorum species variant & laterum & Angulorum respectu.

Respectu laterum Triangulum omne est vel Equilaterum vel Inæquilaterum.

Triangulum Equilaterum habet vel omnia latera æqualia vel duo tantum.

Illud in specie dicitur vulgò Triangulum Equilaterum, Græcis *ισοπλευρον*.

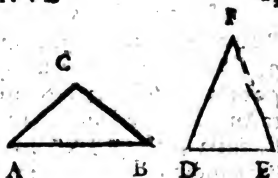
Tale est Triangulum ABC cujus omnia latera AB, BC & AC sunt æqualia.



Triangulum quod duo tantum latera æqualia habet, vulgò dicitur Equicrurum, Græcis *ισοσκελές*.

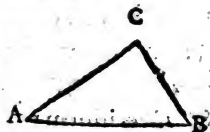
Hujus

Hujus latus tertium aut majus est alterutro æqualium (ut in Triangulo ABC, in quo latera AC & BC sunt æqualia, tertium autem latus AB majus est alterutro æqualium): aut iisdem minus, ut in Triangulo DEF, in quo latera DF & FE quidem sunt æqualia iterum, sed tertium DE alterutro eorum minus. Illud deinceps dicetur primæ, hoc secundæ speciei.



Triangulum Inæquilaterum, quod Græci *σκαλῆνον* dicunt, est, cujus omnia latera inæqualia sunt.

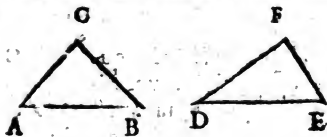
Tale est Triangulum ABC, cujus latus CB reliquorum singulis est minus, AB majus, AC verò majore minus, minore majus.



Respectu angulorum Triangulum omne est vel Rectangulum vel Obliquangulum.

Triangulum Rectangulum, quod Græci *ὀρθογώνιον* vocant, est, quod unum angulum Rectum habet.

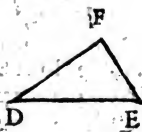
Hujusmodi Triangulum meruit ab Artificibus dici *Magister Matheſeos*, ob ineffabilem usum pariter & præ reliquis præ-eminentiam: potestq; esse vel Equicrurum primæ speciei, vel Inæquilaterum: nunquam verò Equilaterum vel Equicrurum secundæ speciei. Equicruri Trianguli ad C Rectanguli exemplum esto Triangulum ABC: Inæquilateri verò ad F Rectanguli Triangulum DEF. Vulgò in Triangulis Re-



D 3

lis Re-

lis Rectangulis latus Angulo Recto subtenſum (exempli gratiâ latus DE) vocatur Hypotenufa : reliqua duo latera Angulum Rectum circumſiſtentia, dicuntur Baſis &



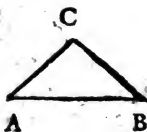
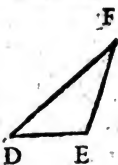
Perpendicularum. Nos ne pluralitate Terminorum Lectori moleſti ſimus, latera angulo Recto adjacentia dicemus Crus Majus (quale eſt FD) & Crus Minus (ſcilicet EF) : id verò quod Angulo Recto ſubtenditur (DE) Hypotenufam.

Triangulum Obliquangulum eſt, cujus nullus angulus eſt Rectus.

Eſtq; vel Obtufangulum vel Acutangulum.

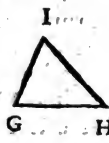
Triangulum Obtufangulum, quod Græcis eſt *ἀμβλυγώνιον*, eſt, cujus unus angulus eſt Obtusus.

Hoc, itidem ut Rectangulum, poteſt eſſe vel Æquicrurum primæ ſpeciei, vel Inæquilaterum (non verò Æquicrurum ſecundæ ſpeciei, nec Æquilaterum). Illius exemplum eſto Triangulum ABC ad C Obliquangulum : hujus Triangulum DEF ad E Obliquangulum.



Acutangulum Triangulum, quod Græcis *ὀξυγώνιον*, eſt, cujus omnes anguli ſunt acuti.

Ejuſmodi Triangulum poteſt eſſe vel Æquilaterum quale eſt Triangulum ABC; vel Æquicrurum quale Tri-



angu-

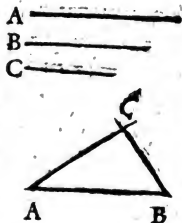
angulum DEF; vel deniq; Inæquilaterum, quale est Triangulum GHI.

Quomodo autem quævis Triangula jam enarrata construui debeant: docebunt sequentia VIII. Problemata.

PROBL. I. Triangulum construere ex datis tribus lineis.

Trianguli fabricandi aut dantur latera, ex quorum mutuo annutu, Triangulum concluditur: aut saltem datur species, puta, quando postulatur fieri Triangulum Rectangulum Æquicrurum vel Inæquilaterum, vel Triangulum Æquilaterum, &c. Ego illius fabricam studio præmitto, & cum Euclide, qui idem docet p. 22. I. moneo, ut caveatur, ne duæ lineæ simul sumptæ aut æquales, aut etiam minores sint tertiâ.

Sunt ergo datæ lineæ rectæ A, B, C, ex quibus sic formandum Triangulum: ponatur quævis earum loco basis, cui nimirum Triangulum Totum insistas: reliquarum longitudines sumantur cum circino & transponantur ex punctis extremis prioris, nimirum ex A & B ad concursum mutuum vel ad intersectionem arcuum in C. Ita latus Trianguli AB referet lineam ex datis longissimam A; latus BC minimam C: latus AC mediam B: atq; ita etiam Triangulum ex datis lineis constructum est.



PROBL. II. Triangulum Æquilaterum construere.

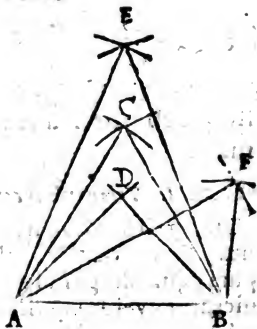
In hoc & sequentibus Problematibus pono, speciem Triangulorum, seu formam eorum saltem dari, non verò materiam, quæ in priori offerebatur.

Summa

Sumtâ ergo lineâ quâ-
cunq; AB, describantur ex A
& B distantia AB duo arcus in
C puncto sese interfecantes,
Puncto C cum A & B conne-
xo erit ABC Triangulum Æ-
quilaterum.

*PROBL. III. Triangula Æqui-
crura utriusq; speciei construere.*

In priori Schemate con-
strui debent super AB quo-
modocunq; sumtâ Triangula dicta. Distantijs AD & BD æqua-
libus quidem, sed quarum quælibet minor est lineâ AB, descri-
bantur iterum duo arcus sese in D interfecantes: D cum A
& B connexo, ut prius, erit Triangulum ADB Æquicrurum
primæ speciei. Si verò distantijs (latere AB majoribus) AE
& BE arcus ad E sese mutuò interfecantes duxeris, punctaq;
ut antea, conjunxeris erit Triangulum AEB Æquicrurum se-
cundæ speciei.



PROBL. IV. Triangulum Inæquilaterum construere.

Supra priorem AB, distantijs AF & FB inæqualibus, qua-
rum tamen illa lineâ AB major, hæc eadem minor est, descri-
ptis duobus arcubus in F se mutuò interfecantibus, connexisq;
F, B, & A punctis erit Triangulum ABF Inæquilaterum.

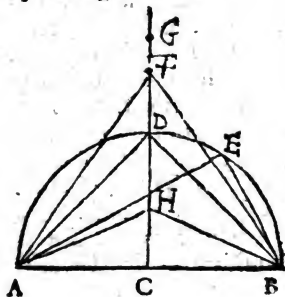
Ceterum uti de Triangulis Æquicruris secundæ speciei,
deq; Æquilateris dubitari nequit, quin sint Triangula Acutan-
gula: ita de Æquicruris primæ speciei & Inæquilateris maximè
aliquando dubitari potest. Ibi enim impossibile est, ut duo
quæcunq; latera ad hiatum anguli Recti, multò minus Obtusi
sibi invicem abnuant: hic & illud & hoc accidere potest.

Quomo-

Quomodo autem ex eo dubio quis eniti queat, docebunt Problem. reliqua.

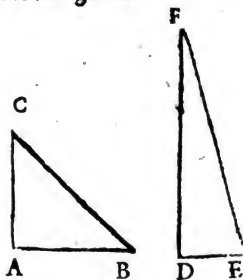
PROBL. V. Triangulum Rectangulum quodcunque construere.

Dixi enim superius, Triangulum Rectangulum esse vel Æquicrurum; imò speciei vel Inæquilaterum. Cujuscunque horum constructio petatur, duc primo lineam AB, ejusque in puncto C dimidium rimare; deinde ex C distantia AC vel BC describe semicirculum, & ex C erige lineam CG obscuram ad AB perpendiculararem, quæ semicirculum in D puncto transibit. Id



punctum cum A & B connexum dabit Triangulum ABD in D Rectangulum, & quidem Æquicrurum primæ speciei. Si verò punctum semicirculi quodvis præter D cum A & B junxeris, descriptum fuerit Triangulum Rectangulum Inæquilaterum, cujus exemplum est AEB ad E Rectangulum.

Potest verò etiam utrumvis Triangulum describi, si supra extremum alterum lineæ AB vel DE, videlicet vel in A vel in D perpendiculum erigatur AC, lineæ AB æqualis pro Triangulo Rectangulo Æquicruro: item perpendiculum DF lineæ DE major minorvè pro Inæquilatero, & utrobique termini linearum ductarum C & B, vel F & E pro completionem Trianguli utriusque per lineas CB & FE connectantur.



E

PROBL. VI.

ad Rectum quam proximè accedat, atq; ita ei fiat similis: aut etiam Rectus nonnunquam videatur Obtusus vel Acutus. Eos Angulos dico Dubios. Ut autem eos probè dignoscas: divide latus Angulo illi dubio oppositum, quod in opposito schemate iterum sit AB bifariam in C & ex C distantia CA vel CB describe semicirculum ADB . Si itaq; angulus ille dubius intra semicirculum inciderit, ita ut semicirculum non attingat, quod accidit angulo H in Triangulo AHB , indicium est eum esse Obtusum: si in ipsum semicirculi ambitum, quod accidit angulis D & E in Triangulis ADB & AEB , concludes eos esse Rectos. Si deniq; dubius angulus extra Semicirculum excurrerit ita, ut crura ejus semicirculum secent, dices angulum dubium esse acutum. Talis est angulus F in Triangulo AFB .

CAPUT VII.

De

SECTIONIBUS PARTIUM TRIANGULARIUM varijs.

HÆc fuit recensio & Partium Triangularium, ipsorumq; adeò Triangulorum: operæ precium fuerit porro videre quomodo & hoc & illa secentur, invicem comparentur, & Circulo adscripta se habeant.

I. De Angulorum Partitionibus.

Anguli Triangulorum aut dividuntur bivariam, aut quomodocunq;.

Illud docebunt Problemata II. sequentia.

PROBL. I. Angulum datum bisecare.

E 2

Sit an-

Sit angulus datus A bisecandus. Posito Circini pede immobili in ipso Anguli A apice, abscindantur, distantia Circini pedum quâcunq; , ex lateribus Anguli, per arcus B & C , segmenta duo æqualia AB & AC : deinde ex B & C , distantia quâcunq; , describantur vel infernè duo arcus in D , vel superne in E se mutuò interfecantes : ita linea ex E per A ducta, vel punctum A cum D connexum, bisecabit Angulum BAC , eritq; Angulorum BAD vel DAC uterlibet dati BAC dimidius.



PROBL. II. Anguli dati dimidium exhibere, q. ãm celerrimè.

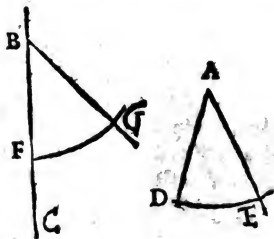
Cum per 20. p. III. Elem. in Circulo angulus ad centrum duplus sit anguli ad Circumferentiam, si uterq; eundem arcum circuli loco basis habuerint: descripto ex A vertice anguli dati, tanquam ex centro Circulus BCE , qui in punctis B & C latera Anguli dati transibit, fietq; arcus BC basis Anguli dati. Deinde sumto in circumferentia circuli puncto D vel E vel quocunq; alio, ducantur ex eorum utroq; ad B & C lineæ DB & DC , item EB & EC : erunt Angulorum BEC , & BDC , super eadem basi BC cum dato BAC constituti, quilibet dati BAC dimidius : quales etiam omnes alij erunt, qui ex quovis alio puncto circuli, basi BC insistant.

Ex hoc



Ex hoc Problemate facillimum etiam fuerit, *Ad datum Punctum data linea recta Angulum dato Angulo aequalem facere.* Vide-
tur enim mihi hoc confectarij instar hinc deduci posse.

Sit igitur angulo A dato in puncto B lineæ B C angulus æqualis construendus. Posito circini pede immobili in puncto A, ducatur, distantia quacunque; arcus D E, utrumque; crus anguli interfecans: deinde, ex puncto B dato, distantia eadem ducatur alter arcus F G lineam B C in F secans, translatâ distantia punctorum D & E in arcum F G, ductâque; lineâ B G, erit angulus F B G angulo dato in puncto B lineæ B C æqualis factus.



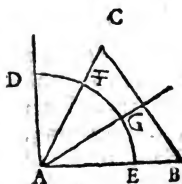
Quin imò, si punctum B detur extra lineam aliquam ubi-
cunque; fiet nihilominus, angulus B angulo A æqualis, modo ar-
cus D E & F G, ut prius, ducas, distantiamque; hanc illi æqualem
facias, lineasque; B F & B G ex communi concursus puncto B per
F & G debito modo exeant.

Ex ratione biseccandi Angulum, si bisegmenta continuè
iterum bisecces, non incommodè quivis angulus da-
tus etiam in quatuor, octo, sedecim, &c. æquales par-
tes dividetur.

In partes tres, quinq; , sex, septem, & ceteras, præter jam
enumeratas, & quæ præterea eadem serie ita decurrunt, non
nisi circuli praviâ apertione & compressione donec ad peri-
tum deveniatur, angulos datos dividere licet: solus Angulus
rectus etiam facilliter in 3. 6. 12. &c. dividuus est: quod ex se-
quenti Problemate teneatur.

PROBL. Angulum Rectum trisecare.

Sit Angulus A Rectus trivariam dividendus : super alterutrum crus describe Triangulum æquilaterum ABC *per Probl. 2. cap. 6.* deinde, posito circini pede fixo in vertice anguli A, describe ope pedis mobilis arcum DFE, qui arcus, mensura anguli Recti A, à latere Trianguli AC, ita secabitur, ut DF, ejus arcus; vel DAF angulus, Recti tertia pars sit : arcus verò FE, vel angulus FAE eorundem duæ tertiæ. Quare si arcum FG arcui DF æqualem feceris, erit totus arcus, & per consequens etiam totus angulus Rectus in tres æquales partes divisus : quarum singulis *per antecedentia* bisectis, erit idem angulus Rectus etiam in sex &c. partes distributus.



Facilius verò etiam eandem trisectionem institues : si ommissa trianguli Æquilateri constructione, ex A arcum DE ducas & ex E eàdem pedum circini distantia in arcu notes punctum F, ex D verò punctum G.

3. De Laterum varijs sectionibus.

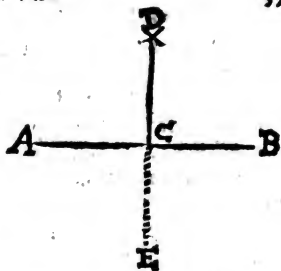
Latera Trianguli vel Lineæ secantur vel in datas partes vel datâ ratione.

Utrumq; docebunt sequentia IIII. Problemata.

PROBL. I. Datam rectam lineam in duas, quatuor, octo, &c. partes dividere.

Bisectio est facilima : coinciditq; omnis praxis cum *Problemate I. Cap. II.* Quæ enim ibi est ratio perpendicularis in medium punctum lineæ datæ incidentiæ vel intersectionis : ea hic est accuratæ bisectionis. Verùm ibi dabatur punctum C lineæ AB

neæ AB medium : hic quæritur.
Quare non tantum ad D supra lineam, verum etiam infra lineam ad E describendi sunt ex A & B duo arcus se mutuò interfecantes, ut deinceps connexio punctorum D & E punctum C quælitum ostendat.

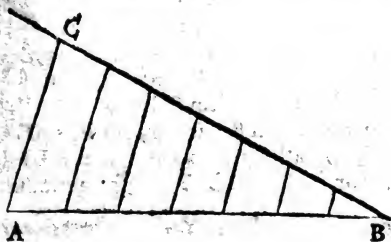


Si verò infra lineam non sit locus pro intersectionibus ad E arcuum, tum supra lineam citra vel ultra D ij ducantur : succedetq; bisectioni nihilominus, ut prius.

Si porro bisegmenta hæc lineæ AB iterum bisecueris, ut antea ipsam lineam, erit tota linea in quatuor æquales partes secta : siq; earum quamvis iterum ita partiaris, habebis partes octo, & sic deinceps.

PROBL. II. Quomodo data aliqua linea in partes quascunq; : C, si opus sit, in partium etiam partes dividenda sit.

Sit data linea AB dividenda in partes æquales septem, ut id tantò commodius perficias, adjice ipsi aliam lineam, nempe BC, angulo ABC quocunq; : sumeq; in eâ partes illas septem, ope cir-

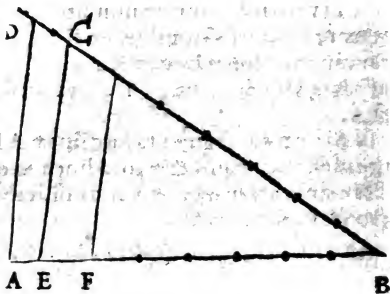


cini, in quas AB dividi debet. Deinde extremum divisionis versus C punctum connecte per lineam rectam cum puncto A : ex reliquis verò punctis lineæ BC, ducas alias lineas priori CA parallelas,

rallelas, per *Probl. II. Cap. III.* Quo facto, erit per parallelar. istarum in lineam *AB* incidentiam, ipsa etiam *AB* in septem partes æquales divisa.

Quod si tædium ductionis Parallelarum evitare velis: sufficit, si extremam *AC* & primam Parallelarum ducas: ita enim in *AB* linea habebis unam quæsitam partium, quam si per totam lineam transposueris, erit & hoc modo divisio satis accurata.

Si verò linea *AB* non tantum in septem partes (vel quascunq; alias) sed & insuper in duas tertias unius ex illis septem partibus dividenda sit: tum divide totam *BC* adjectam in octo partes æquales, octavam autem illam in datas particulas (in nostro exemplo ob duas tertias integris annexas trifecamus): postmodum connecte iterum *A* cum puncto quæsitæ particularum ultimo, hoc in loco cum puncto *D*, ut inter *D* & *C* duæ tertiæ partis octavæ sint, & ex *C* duc lineam *CE* ad *AD* parallelam: ita *AE* erunt duæ tertiæ in lineâ *AB* quæsitæ, cui lineæ *CE*, si iterum ex sequenti puncto parallelam duxeris, habebis *EF* distantiam reliquorum punctor. in *AB* versus *B* transponendam.



PROBL. III. Quomodo linea aliqua secanda sit eâ Proportione, quâ alia secta est: vel in partes quascunq; quæ habeant proportionem vel rationem datam.

Sit linea *GH* ita secanda, ut segmenta eandem proportionem inter se habeant, quam vel lineæ *A* & *B* datae, vel lineæ *DE* segmen-

segmenta DF & FE invicem habent. Lineam DE, quæ & ipsa ex A & B composita est, angulo quocunq; appone lineæ GH in puncto H, ut HL æquetur ipsi FE vel B, & KL ipsi DF vel A: deinde connecte extrema utriusq; lineæ K & G per lineam KG & ex L lineæ KG parallelam, ut in prioribus



Problematicis, LI ducito, quæ lineam GH in I puncto ratione eadem secabit, quæ HK in L, vel DE in F secta est: hoc est, ut se EF ad FD vel HL ad LK habet: ita etiam se habet HI ad IG. Quod si ulterius pergere lubet, & HI lineam eadem ratione secare vis, fiet id beneficio linearum KI & LM in puncto M: quin & HM per lineas KM & LN etiam in N ita secabitur.

CAPUT VIII.

De

PARTIUM TRIANGULARIUM MUTUÆ
Comparationibus.

PARTIUM porro Triangularem considerandæ veniunt comparationes mutuæ.

Comparantur autem vel cum lateribus latera vel anguli cum angulis, vel latera cum angulis, & contra.

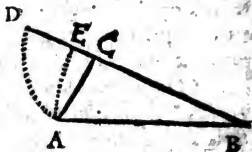
Latera Trianguli inter se comparantur sequenti Theoremate.

THEOR. Cujuscunq; Trianguli duo qualibet latera simul sumpta sunt majora reliquo, quemodocunq; sumantur.

F

Cum

Cum enim Triangulum constet ex mutua trium linearum inclinatione, non potest non veritas Theorematis apparere vel ex vulgatâ lineâ rectâ definitione Archimedea, qua scimus *lineam Rectam esse minimam earum, quæ Terminos habent eisdem*. Qui enim Termini sunt unius cujuscunq; ex Trianguli tribus lateribus, ij etiam sunt reliquorum duorum, quæ tamen duo latera simul sumta, utut singula multò minora tertio, necessario illo majora sunt. Non enim ex æquo interjacent inter sua illa extrema, sed per quendam quasi ambitum. Ut in Schemate appposito Trianguli ABC latus AB majus est latere AC & latere BC seorsim sumtis: at non iisdem simul sumtis. Inter quæ enim extrema A & B latus AB directè interjacet, inter eadem & reliqua duo AC & BC ad punctum C infractæ vel inclinatz interjacent. Hinc si ex ambitu illo suo ad directionem quandam deprimantur, hoc est, altera alteri in directum apponatur, omnino longiora erunt tertio. Sumta enim lineâ CD quæ æqualis sit lineæ AC , appositâq; eâ lineæ BC in directum, æquabitur utiq; BD hoc modo composita utriq; AC & BC : verum eadem composita BD superat latus AB notabili parte, nimirum lineâ DE . Unde Theorematis veritas satis est manifesta.



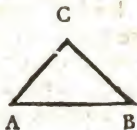
Latera verò cum angulis, & contra, comparantur invicem Theorematibus VI. sequentibus.

THEOR. I. Latera duo quacunq; dicuntur Anguli ejus, quem comprehendunt, Crura: latus verò reliquum eidem Angulo oppositum dicitur Bas.

Nominum horum ratio petita est ex figurâ crurum humani corporis, quæ & ipsa suâ divaricatione angulum comprehendunt. Si verò ipsis annumeres id spaciij, quod inter pedes, de fundam-

fundamento, cui pedes insistant, interjicitur, habebis Trianguli effigiem.

Sic Anguli ACB crura sunt latera AC & CB : AB verò Basis. Anguli ABC crura sunt latera AB & CB : AC verò Basis. Anguli deniq; BAC crura sunt latera AB & AC : basis vero BC .

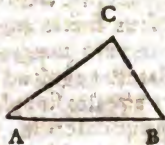


II. Latus unumquodq; dicitur angulo sibi opposito subtendi vel eundem subtendere.

Prius vocabatur ejusdem Basis, quod angulus ei quasi fundamento cuidam insisteret : jam alio respectu subtensa vel subtendens ; quod scilicet eidem angulo instar nervi Arcui cuidam incurvato subtensa sit : vel potius, quod instar nervi cujusdam lignum aliquod in hanc curvitatē vel angulositatem coactum subtendat, cohibeatq; ne in rectum resiliat. Ita BC subtendit angulum BAC : AC angulum ABC : AB deniq; angulum ACB .

III. Maximum Latus maximo Angulo in omni Triangulo subtenditur : & contra ; Maximus angulus maximo lateri opponitur.

Perspicuum hoc est ex majori minorivī crurum anguli alicujus divaricatione. Cujus enim anguli crura ad magnum usq; hiatus anguli invicem secedunt, ea necessariò per magnum etiam latus tertium connectuntur : uti angusti anguli crura etiam per latus minus, &c. Sic in Triangulo ABC latus maximum AB subtenditur Maximo angulo ACB : idemq; AC & B maximus angulus non nisi maximo lateri AB oppositum esse potest.

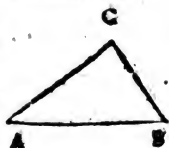


IV. Minimum latus minimo Angulo subtenditur : & contra.

Ita AC latus minimum minimo angulo CAB subtenditur.

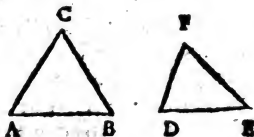
V. Mediocri latus mediocri Angulo subtenditur; & contra.

Ita AC latus, quod latere CB majus, latere autem AB minus, ideoq; mediocri est, opponitur angulo ABC, qui angulo CAB major, angulo autem ACB minor, & hoc nomine etiam mediocrius est.



VI. Latera aequalia subtenduntur aequalibus angulis, & contra; latera aequalia autem inaequalibus, & contra.

Ita in Triangulo ABC Aequilatero, omnes etiam anguli sunt aequales, ob latera omnia aequalia. In Triangulo autem DEF Inaequilatero, ob laterum inaequalitatem, omnes etiam anguli sunt Inaequales.



Ex his Problematibus evidens & manifestum fit: *Omne Triangulum Aequilaterum esse quoq; Equiangulum, & contra: Omne Triangulum Inaequilaterum esse etiam Inequiangulum, & contra: In omni Triangulo Aequicruro duo latera aequalia arguere & duos angulos sibi oppositos aequales; & contra.*

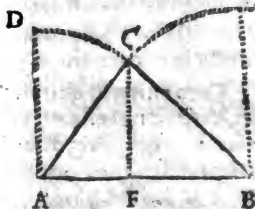
Quin & cum promptius sit Examen laterum, quam angulorum, vel oculorum judicio, facillimum ex his Problematibus fuerit angulos dubios internoscere, utrum aequales, an verò inaequales sint. Ita enim in Triangulo DEF Inaequilatero anguli ad D & F sunt dubij uter reliquo sit major, aut num aequales sint planè. Ex hypothesi constat, Triangulum esse Inaequilaterum, erit itaq; etiam *per antecedentia* Inequiangulum: atq; idèd anguli ad D & F inaequales: eritq; ille angulus, major qui majori lateri opponitur; nimirum angulus EDF cui latus EF majus subtenditur: alter autem DFE, qui latus Minus DE oppositum habet, erit necessariò minor.

Quo-

Quomodo soli inter se anguli comparentur, ostendunt
Theoremata X. sequentia,

*THEOR. I. Cujuscunq; Trianguli omnes tres anguli simul summi
æquantur duobus angulis Rectis.*

Quomodo hoc Theorema apud Euclidem demonstretur,
prop. 32. lib. I. videatur suo loco : nos *ἀποδείξω* sequentem subi-
cimus. Ex superioribus constat, cum linea lineæ perpendicu-
lariter insistit, fieri ex utrâq; parte perpendicularis angulos Re-
ctos : itaq; & in appposito Schema-
re lineæ AD & BE ad AB perpen-
diculares, angulos DAB & EBA
Rectos facient. Hæ verò tres li-
neæ, quàm diu supernè hiant, nec
concurrunt, aut spacium interce-
ptum concludunt, nullam figu-
ram constituunt. Quam primum
autem verticibus suis D & E in ar-



cubus DC & CE annuerint; accedent magis magisque ad Figu-
ræ constitutionem : donec tandem in puncto C concurrentes
Triangulum ABC faciant. Quæ itaq; mensura prius erat duo-
rum angulorum priorum DAB & EBA à lineis DA , AB , & BE
comprehensorum, eadem etiam mensura manet invariata tri-
um angulorum CAB , ABC & ACB , postquam lineæ illæ ad e-
am conniventiam accesserunt, ut Triangulum ABC constitue-
rent. In eo enim Triangulo manet AB , ut prius erat : AC eti-
am æquatur lineæ AD , BC verò lineæ BE : sed anguli DAE &
 EBA decreverunt, & ex Rectis degenerarunt in acutos CAB &
 CBA , cætamen lege; ut, quod utrimq; decessit angulis Rectis,
id numeretur conjunctim pro angulo ACB . Ductâ enim ex C
ad AB perpendiculari CF , erunt DA , CF , & EB parallelæ, an-
guliq; DAC & ACF , itemq; $EB C$ & BCF *ἑωσθησάν* positi vel
F 3 alterni;

alterni; ideoq; & per Cap. IV. æquales. Unde evidens est in omni Triangulo tres angulos simul sumtos æquari duobus Rectis.

II. Tres anguli cujusvis Trianguli simul sumti æquantur tribus Trianguli alterius angulis simul sumtis.

Perspicuum hoc est ex priori Theoremate. Illius enim æquæ atq; hujus Trianguli omnes tres anguli simul sumti æquantur duobus Rectis vel 180. grad. per antecedens Theorema: igitur si maximè differant singuli anguli illius à singulis hujus, omnes tamen simul eandem utrobique summam faciunt.

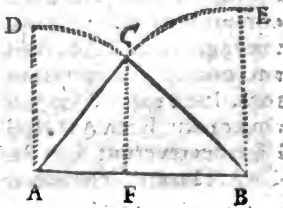
III. Omnis Trianguli duo anguli, quomodocumq; accipiantur, duobus Rectis sunt minores.

Cum enim in quovis Triangulo tres anguli æquantur duobus Rectis: necesse est duos angulos omninò minores duobus Rectis, tertiumq; duorum illorum ad duos Rectos complementum esse.

IV. In omni Triangulo, cujus unus angulus fuerit Rectus vel Obtusus, reliqui duo sunt Acuti.

Si enim duo Recti darentur, æquarentur duo alicujus Trianguli anguli duobus Rectis, quod absurdum est ex anteced. proximo Theoremate. Si verò præter Rectum

Obtusus daretur, aut duo Obtusi, tum superarent duo Anguli duos Rectos, quod iterum contra mentem est ejusdem Theorematis. Sed & ex appposito Schemate manifestum est, tres lineas A-B, A-D, & B-E duos angulos Rectos constituentes non concludere spacium



(quod multò minus facerent, si ad hiatus duorum Obtusorum usq; sibi mutuò abnuerent) ideoq; nullum Triangulum omninò con-

nō constituere posse prius, quam duo illi priores anguli Recti in tres quidem angulos ABC , BAC & BCA , sed tales, qui duos Rectos non superent, concesserint.

V. Omnes Anguli Trianguli Equilateri sunt acuti.

Est enim eorum quivis tertia pars de duobus Rectis, vel duæ tertiæ unius Recti, hoc est, 60. grad. Ter enim 60. grad. sunt 180. gr. vel duo Recti.

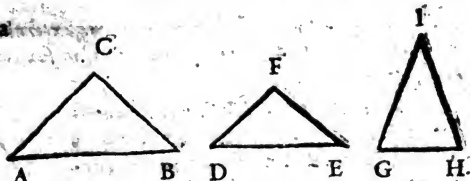
VI. Trianguli Equicruri duo aequales Anguli supra Basin necessarij sunt acuti.

Si enim angulus reliquus Basi oppositus fuerit vel Rectus vel Obtusus, jam ex Theorem. IV. perspicuum est reliquos ad Basin, de quibus hic sermo est, esse acutos. Si verò maximè tertius ille acutissimus sit: erunt tamen nihilominus reliqui duo Ejus ad duos Rectos complementum; atq; ideò utervis Eorum Recto mihor, id est, Acutus, Semirecto tamen Major.

VII. In Equicruro Triangulo Rectangulo, quilibet equalium Angularum est Semirectus: in Acutangulo Semirecto major: in Obtusangulo minor.

Res per se plana

est & manifesta, nec indiget ulteriori demonstratione: ex exemplo tamen Tironibus erit



tantò evidentior. Triangulum ABC est ad C Rectangulum. Angulus ergo ACB 90. grad. reliquorumq; æqualium aggregatum itidem 90. grad. & eorum uterlibet 45. grad. vel Semirectus. At in Triangulo DEF ad F Obliquangulo, si angulus DFE sit 100. grad. erit aggregatum reliquorum 80. gr. eorumq; uterlibet 40. gr. minor Semirecto. Deniq; in Triangulo GHI

ad 122

ad I acutangulo, esto Angulus GIH 30. grad. reliquorum aggregatum erit 150. gr. eorumq; quilibet 75. grad. Semirecto omnino major.

VIII. In Triangulo Rectangulo Acutorum unus est alterius ad Angulum Rectum vel 90. grad. complementum.

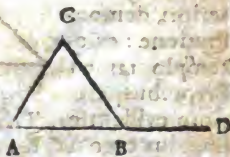
IX. Equicruri Trianguli cruribus productis ultra Basin, anguli sub Basi sunt æquales.

Triangulum ABC in apposito Schemate est Equicrurum, ob latera AC & BC æqualia: unde & anguli CAB & CBA , lateribus æqualibus opposita æquales sunt. Si crura ultra basin AB producantur usq; ad D & E , fient alij duo anguli sub Basi BAD & ABE æquales sibi invicem. Sunt enim hi posteriores singuli priorum illorum singulorum ad duos Rectos complementa, per eaque Cap. IV. dicta sunt; Anguli autem, quorum hi complementa sunt, nimirum CAB & CBA ex hypothesis sunt æquales: ergo & complementa (illius BAD , hujus ABE) æqualia sunt.



X. Producto latere Trianguli quocumq; externus Angulus major est utrobet interiorum & oppositorum seorsim sumtis: ambobus vero simul sumtis æqualis.

In Triangulo ABC producatursatus AB usq; ad D , ut fiat externus angulus CBD . Respectu hujus dicuntur anguli CAB & ACB interni & oppositi: ABC verò est & ipse angulus quidem internus est, non est tamen angulo CBD oppositus: sed eidem tantummodo adjacet. Illo- rum utrovis dicitur externus CBD major: utriq; autem æqualis. Quod nisi ad oculum ferme cuivis intuenti appareret: vel hinc



vel hinc tamen conspicuum fieret. Dictum est *in superioribus*,
Cap. imprimis IV. in puncto B, Angulos CBA & CBD, qui fiunt
 mutuo linearum AD & CB concursu, fieri duobus Rectis æ-
 quales. Notum est etiam *per eamque hoc capite sunt dicta*, in ABC
 Triangulo tres angulos ABC, BCA & CAB æquari duobus
 Rectis. Exclusergo angulo ABC, qui bis sumitur: æquabi-
 tur unicus externus CBD utriq; interno & opposito, reliquis
 nimirum angulis CAB & ACB. Cumq; ambobus simul æque-
 tur: erit utiq; eorum utrovis minor.

CAPUT IX.

DE

PARIIS TRIANGULORUM
sectionibus.

Vidimus hactenus sectiones & comparationes par-
 tium Triangularium: consequens est, ut porro
 etiam videamus quomodo ipsa Triangula secen-
 tur, & invicem comparentur.

Sectio Triangulorum fit per lineas: easq; vel perpen-
 diculares, vel parallelas, vel quascunq; alias.

Perpendicularis cadit ex angulo quocunq; ad latus op-
 positum: sive ad ejus anguli basin.

Caditq; aut intra Triangulum, aut extra illud.

Intra Triangulum cadit Perpendicularum, cum anguli
 ad Basin sunt Acuti.

Si verò angulus ad Basin alter fuerit Obliquus, cadit
 Perpendicularum extra Triangulum in continuatam
 basin, versus partes Anguli Obtusi.

G

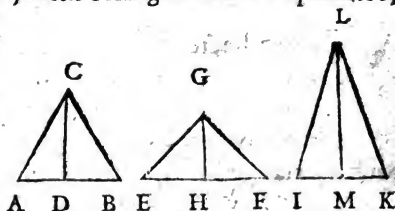
Quod

Quod si deniq; angulus ad Basin alteruter fuerit Rectus, concurrit Perpendicularis, quæ duci debebat, cum altero Crure Anguli Recti erecto, quasiq; in illud absorbetur; siquidem illud jam ante Perpendiculare ad Basin est, ob Angulum Rectum.

De sectione autem Perpendiculari teneantur sequentia III. Theoremata.

THEOR. I. Perpendicularum ab Angulo Æquicruro in Basin ductum, bisecat & angulum, ejusq; basin, & totum insuper Triangulum resolvit in duo Rectangula Triangula equalia.

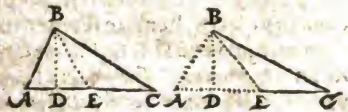
Fit hoc tam in Triangulo Æquilatero, quàm Æquicruro utriusq; speciei, ut ex adjunctis Triangulis A B C Æquilatero, E F G Æquicruro primæ, & I K L secundæ speciei videre est, in quibus singulis & anguli A C B, E G F, & I L K Æquicruri una cū Basibus A B, E F & I K bivarium dividuntur, ipsa insuper etiam Triangula in alia duo æqualia, & quidem Rectangula ad D, H & M dividuntur. In Æquilatero hoc etiam notandum, quod bisegmenta ejus præter Rectum ad D, alterum angulum habeant duas tertias unius Recti, vel 60. gr. (illum nimirum, qui & angulus est Trianguli Æquilateri ante ejus bisectionem, qualis est in bisegmento A D C angulus C A D, & in altero C D B angulus C B D): reliquum verò, puta A C D vel D C B tertiam partem unius recti vel 30. grad.



II. Perpendicularum ab angulo Inæquicruro ad Basin intra Triangulum ca-

lani cadens, secat & angulum, & Basin, & totum Triangulum in partes inaequales : ita tamen ut segmenta majora majori cruri, minora minori adjacent.

Id videre est in apposito Schemate priore vel Triangulo Inaequilatelo ABC, in quo ex angulo Inaequicruro ABC demissum ad Basin AC Perpendiculum BD & angulum ABC in ABD & DBC; Basin AC in AD & DC: totum Triangulum in ABD & CDB; partes inaequales, illas minores has majores, dispescit : apparet tamen quod segmenta majora sint versus partes cruris majoris BC, minora versus partes cruris minoris AB.

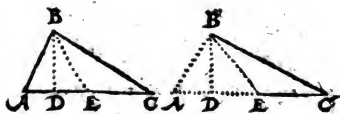


III. Perpendiculum quod extra Triangulum in continuatam Basin cadit, etiam, ut in prioribus, Triangulum datum in duo Rectangula reuincit.

Sed forma & ratione paulo diversa, & alia à priori : alterum enim Triangulum est adnatum, contineturq; sub Perpendiculo & Basis continuatione & latere Trianguli dati eo, quod ab Angulo, unde Perpendiculum decedit, versus angulum obtusum descendit : alterum est compositum ex dato & adnato Triangulis. Quæ Triangulorum compositio etiam augmentum anguli verticalis causatur. Ut in adjecto Schemate posteriore videre est, in quo ob angulum BEC, in Triangulo BEC, obtusum Perpendiculum BD ex B extra Triangulum EBC in Basin CE, sed usq; ad D continuatam incidit : atq; ita, uti dictum, etiam duo Triangula ad D Rectangula facit, ex quibus EBD dico adnatum, CDB verò compositum ex adnato EBD & dato CEB.

Ceterum ut ejusmodi Triangula tantò commodius suo loco (*infra, Libro Trigonometria tertio*) tractari queant : transferunt Artifices in Priori schemate AD Segmentum Basis AC à D

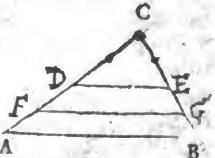
versus C usq; ad E, ut DE æquetur ipsi AC, ducuntq; lineam BC : in altero transferunt & DE citra perpendicularum usq; ad



A, ut DA ipsi DE æquetur, ducuntq; lineam AB. Deinde vocant in priori Schemate segmentum Basis AD *Casum minorem*, segmentum verò DC *Casum majorem*, quos casus ab AC *Basis vera* seu *Aggregato Casuum* facit Perpendicularum BD : EC verò vocant *Basis Alternam* seu *Differentiam Casuum*, quâ Casus Major DC ab AD casu minori deficit. Verum in posteriori schemate est AD *casus minor*, DC *casus major*, EC *Casuum Differentia* seu *Basis vera*, AC *Aggregatum Casuum* seu *Basis Alternam*.

De Sectione Triangulorum per lineam uni laterum Parallelam teneatur Theorema sequens.

THEOR. *Linea Recta uni laterum Trianguli Parallela secat reliqua Proportionaliter : aufferitq; Triangulum toti Triangulo simile, quorum unius latera proportionalia sunt lateribus alterius aequales prioribus angulos comprehendensibus.*

In Triangulo ABC appposito ducatur ex puncto E lateris CB medio linea DE lateris AB Parallela per Probl. II. Cap. III. quæ necessariò etiam latus tertium AC in puncto D bivariam secabit : ex qua sectione satis evidēs est Proportio-

 A
 nalitas. Ut enim CE se habet ad EB : ita CD ad DA : utrobique nimirum est partium æqualitas. Non aliter fieret, si ex alio quocunq; lineæ CB puncto parallela exiret. Sumatur enim G punctum, ducaturq; GF iterum lineæ AB parallela : id punctum G quâ ratione secat lineam CB, eadem etiam secat punctum F lineam CA. Ponatur lineæ CB esse quatuor partium, absin-

datq;

datq; G punctum quartam ejus partem GB : ergo ut CG se habet ad GB vel ut 3. ad 1. ita etiam se habebit CF ad FA : hoc est, FA iterum erit quarta pars lineæ AC vel tertia lineæ FC.

Deinde & lineæ DE abscindit à toto Triangulo ABC Triangulum DCE, priori ABC Triangulo simile. Cum enim DE sit lineæ AB Parallela : erunt Anguli CDE & CED angulis CAB & CBA æquales : angulus autem ad C est utriq; Triangulo communis : ergo ex solo *ἰσχυρίσματος* principio & lege, æqualis utrobq;. Æqualitas hæc angulorum concludit etiam proportionem laterum. Quemadmodum enim prius in Cap. VIII. ex æqualitate angulor. ejusdem Trianguli vel æqualium Triangulor. æqualitas laterum concluderetur : ita hic in Triangulis similibus ex angulis æqualibus proportio laterum judicatur. Clarius : Angulus ACB in Triangulo ABC majori æqualis est Angulo DCE in Triangulo minori : Latera ergo AC & BC Trianguli majoris angulum ACB comprehendentia utut sunt majora & ipsa lateribus DC & EC angulum DCE in minori Triangulo comprehendentibus : sunt tamen inter se proportionalia, hoc est, ut AC se habet ad CB : ita DC se habet ad CE, & contra. Idem judicium esto de lateribus AC & AB angulum A in majori ; & DC & DE angulum D in minori : item de lateribus AB & BC angulum B ; & DE & EC angulum E comprehendentibus.

Quæ de Proportionem laterum Trianguli DCE ad latera Trianguli ACB dicta sunt : ea etiam intelligi debent de lateribus Triangulorum FCG & ACB. Nam

Ut AC ad CB : ita FC ad CG :

& Ut AC ad AB : ita FC ad FG :

& Ut AB ad BC : ita FG ad GC.

Ex jam dictis apparet etiam veritas Divisionis lineæ cujusvis in datas partes vel datâ ratione, de qua supra egimus cap. VII. tribus Problematis : Potestq; idem etiam tali ratione institui, uti hujus Theorematis schema innuit.

G 3

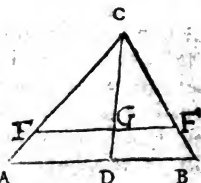
Linea

Linea secans Triangulum, quæ nec perpendicularis est uni laterum, nec parallela, ducitur aut ab angulo ad latus oppositum : aut à latere quocunq; ad aliud.

Hæc sectio, cum Geodætica sit maximam partem, merito in commodius tempus reservatur : de priori illa teneantur sequentia II. Theoremata.

THEOR. I. Linea Recta secans angulum aliquem Trianguli bivariam, basin verò Anguli in partes inæquales : arguit Angulum bisectum Inæquicrumum esse ; majusq; basios segmentum cum Crure majore, minus cum minore coincidere ; segmentaq; insuper basis eandem rationem invicem habent, quam crura.

In Triangulo ABC dividatur angulus ACB per lineam CD bivariam, ut ACD angulus, angulo DCB æqualis fiat. Eadem autem CD , quia Basin AB in inæqualia segmenta nimirum AD majus & DB minus dividit, arguit crura anguli bisecti etiam inæqualia esse, majusq; AC concurrere cum segmento Basis majori AD , crus minus BC , cum segmento minori DB . Quæ omnia ex schematis inquitu satis manifesta sunt. Interea tamen basis segmenta ita se habent, majus ad minus, ut crus majus ad minus : hoc est : quanto majus est anguli bisecti crus majus AC crure minore BC : tanto majus est etiam segmentum Basis Majus AD , minore DB , & contra.



III. Si Basis, per lineam ex Angulo non tantum bivariam, sed quomodocunq; etiam secto divisæ, parallela ducatur, dividuntur & basis & parallela illa eadem ratione.

In Triangulo priori ABC , Basis AB per lineam CD ex Angulo ACB quomodocunq; secto descendens, dividitur in duas

duas partes inæquales : ducta linea EF lineæ AB parallela ex mente Problematis secabitur ea per lineam CD in puncto G eadem ratione : hoc est, ut AD erat ad DB : ita erit EG, ad GF, Constat enim ex Theoremate de sectione Parallela esse,

Ut CE ad EA : ita CF ad FB : item

Ut CA ad AD : ita CE ad EG : &

Ut CB ad BD : ita CF ad FG : ob angulorum CAD & CEG : item CBD & CFG æqualitatem. Erit ergo etiam

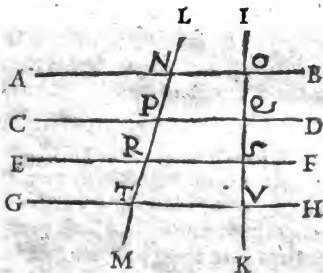
Ut AD ad EG : ita DB ad GF : &

Ut AD ad DB : ita EG ad GF.

Perspicuum insuper fit ex proximis Tribus Problematibus, postquam Proportionis nomen paulò plus innotuit, quam supra Cap. III. ubi de Parallelis agebatur ;

Si Parallela linea alijs lineis non parallelis intersecantur, intersegmenta earum esse invicem proportionalia.

Incident enim in lineas AB, CD, EF, & GH parallelas IK & LM, lineæ : illa in punctis O, Q, S, V, hæc in punctis N, P, R, T. Dico mutua tam parallelarum, quam secantium intersegmenta esse proportionalia, hoc est, Ut LT, ad TV : ita LR ad RS ; & LP ad PQ ; & LN ad LO. Et Ut TV ad RS ; ita RS ad PQ ; & PQ ad NO. Item Ut IO ad NO ; ita IQ ad PQ : & IS ad RS : & IV ad TV esse, & contra. Quæ omnia ex prius dictis plus quam evidentia esse puto.



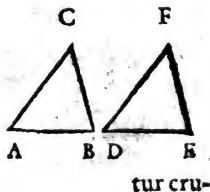
TRIANGULORUM COMPARATIONIBUS MUTUIS.

Ipsa autem Triangula quomodo invicem comparentur, docebunt sequentia V. Theoremata.

Nisi ob maximam hujus & precedentis capitis affinitatem, multa prius dicta essent: plura Problemata constitui potuissent de Triangulorum comparationibus. Verum cum sedulo lectori facile se omnia offerant ex antecedenti capite, quæ huc faciunt: nolui cramben bis coctam apponere. Quin potius solertia etiam privata cujusvis ut quedam reliquantur non puto non inconueniens omnino esse. Cur verò in diversis capp. ista proposuerim, causam hanc habeo, quod in precedenti capite primario respexerim ad partium Triangularium mutuam proportionem: in hoc autem supprimis ad ipsorummet Triangulorum aequalitatem vel inaequalitatem digitum intendam.

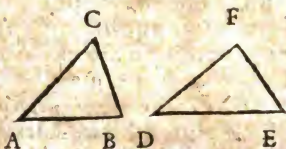
THEOR. I. Triangula si æquantur angulis æquicruris: sunt æquiangula & æquilatera: & contra, si variabunt angulus æquicruris, hoc est, si æquicrurorum angulorum unus altero major est: sunt inæquilatera & inæquiangula.

Angulum Æquicrurum dico respectu comparationis duorum pluriumvè Triangulorum, non quod crura alicujus Trianguli ponam æqualia, qua ratione totum Triangulum dicitur æquicrurum: sed, quod crura anguli certi in Triangulo uno intelligam æqualia, cruribus anguli cujuscunq; in Triangulo altero. Hac enim ratione mihi uterq; angulus dicitur Æquicrurus. Ut in Triangulis ABC & DEF etsi non (ex his quæ capite VI. sunt dicta) æquicruris, anguli tamen ACB & DFE sunt æquicruri; quia crura AC & CB angulum ACB in Triangulo ABC comprehendunt, æquantur cru-



tur cruribus DF & FE angulum DFE in Triangulo DEF comprehendentibus; illud illi; hoc huic. Latus verò etiam AB lateri DE æquabitur; siquidem æqualibus angulis ACB & DFE opposita sunt ambo: cumq; CB & FE latera, item AC & DF æqualia sint invicem; erunt & anguli CAB & FDE, item anguli ABC & DEF æquales; & per consequens ex mente Theorematis ambo Triangula æquilatera & æquiangula.

Secus autem fit in exemplo altero, ubi anguli ACB & DFE æquicruri quidem sunt, quia crus AC cruri DF, crus CB cruri FE æquatur: at anguli ACB & DFE à cruribus illis comprehensi non sunt æ-



quales; hic enim DFE, cujus crura ad majorem hiatum sibi mutuò abnuunt, illo ACB multò est major: unde & Basis illius DE, basi hujus AB multò major est. Utur verò etiam crura angulor. ACB & DFE inter se æquentur ita, ut prius dictum: variant tamen nihilominus anguli æqualibus cruribus utrobique; oppositi, ideò scilicet, quia anguli priores æquicruri variant. Quantà enim parte angulus DFE major est angulo ACB: tantà parte uterq; FDE & FED simul sumti minores sunt angulis CAB & CBA simul sumtis: siquidem *per superiora* utrobique; Trianguli unius tres anguli æquantur tribus angulis Trianguli alterius.

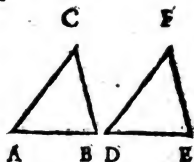
II. Si duo unius Trianguli anguli duobus angulis alterius Trianguli sint æquales; unumq; latus (quod aut inter æquales utrobique; angulos interjicitur, aut uni æqualium angulorum subtenditur) uni lateri æquale: æquiangula & æquilatera iterum erunt ambo Triangula.

In appposito Schemate angulus ACB Trianguli ABC æquatur angulo DFE Trianguli DEF: angulus item ACB angulo

H

gulo

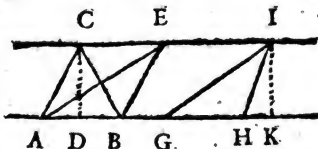
gulo FDE. Aequatur verò etiam latus AC quod utriq; dictorum angulorum in Triangulo ABC interjacet, lateri DF, quod itidem utriq; æqualium angulorum in Triangulo DEF interjacet. Ergo & reliquæ partes Trianguli ABC reliquis partibus Trianguli DEF æquabuntur: hoc est, Angulus ABC æquabitur angulo DEF ob opposita latera æqualia: AB etiam æquabitur lateri DE, quia anguli oppositi sunt æquales: latus deniq; CB æquabitur lateri FE eandem ob causam.



Idem concluderetur, si præter Angulos ACB & CAB angulus DFE & FDE æquales AB latus, quod uni æqualium angulorum opponitur, æquale ponatur lateri DE, quod alteri angulo æquali subtenditur, &c.

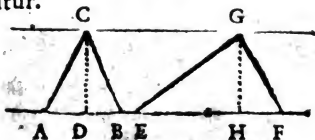
III. Triangula super eadem vel æquali basi, & inter easdem parallelas constituta seu æquæalta, sunt æqualia: Æquæalta autem Triangula supra diversas bases inequalia sunt.

Duo Triangula ABC & ABE, quorum basis AB communis est, quæq; inter easdem parallelas CI & AK constituta sunt, seu quæ sunt æquæalta (quod inde cognoscimus, quod perpendiculum CD à vertice C illius ad basin AB ductum æquatur EG Perpendiculo hujus à vertice E ad basin continuatam descendenti) dico etiam æqualia esse. Alibi in *Geodesicis* suo tempore docebitur, quod jam instar principij assumpto, Tironum causâ, *Rationem Triangulorum esse compositam ex ratione basium ad altitudines*. Quia itaq; in Triangulis ABC & ABE basis AB eadem est, altitudoq; illius CD, altitudini hujus EG æqualis, utut latera varient & anguli, erunt ipsa Triangula invicem



wicem (respectu scilicet areae) æqualia. Idem etiam verum est in Triangulis ABC & GHI, quorum bases AB & GH, itidem ut altitudines CD & IK æquantur.

At Triangula ABC & EFG, etsi altitudinibus CD & GH conveniunt, differunt autem basibus AB & EF, quarum hæc major, illa minor, inæqualia sunt.



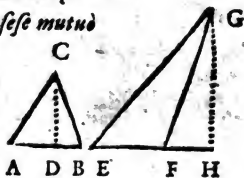
Ex hoc verò etiam Theoremate confectariorum instar duo Theoremata reliqua promanant:

IV. Triangula aequalia habent sese mutuo ut bases.

Nimirum quia in proximo Schemate EF basis Trianguli EGF dupla, est basis AB Trianguli ABC: est & Triangulum EGF duplum Trianguli ABC. Si basium una alterius tripla esset, esset & Triangulum unum alterius triplum.

V. Triangula aequalium basium habent sese mutuo ut altitudines.

Iterum ergò hic Triangulum EFG duplum erit Trianguli ABC: quia bases AB & EF æquales; Altitudo verò GH dupla altitudinis CD, &c.



CAPUT XI.

De

TRIANGULATIS IN GENERE, EORUMQUE
resolutione in Triangula.

A Necquam ad adscriptionem Triangulorum & partium Triangularium in Circulum transeamus: restant eorundem comparationes cum quadratis & Parallelogrammis, quæ tantò sunt præstantiores ijs, quas hactenus vidimus, ut hæ illorum umbras vix dicere liceat.

H 2

Verum

Verum cum nec de Quadratis, nec de Parallelogrammis, quin imò nec de Triangulatis in genere omnibus quicquam hactenus ita actum sit, ut eorum natura examissim Lectori Meo perspecta sit: opera precium fuerit capite uno & altero proximis ως εν παρόδω ea fusius paulo persequi.

Triangulata ergò sunt Figuræ Planæ ad Trigonometriam non alio respectu pertinentes, quàm quatenus ad Triangula, quod & supra Cap. I. dictum est, sunt reducibiles.

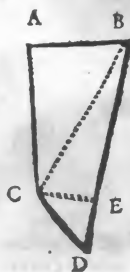
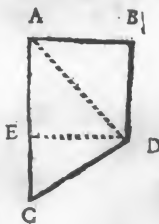
Suntq; vel Quadrilateræ vel Multilateræ.

Quadrilateræ sunt vel Parallelogramma vel Trapezia: Parallelogramma aut omnia latera, omnesq; angulos, aut quædam latera & quosdam angulos habent æquales.

De his agetur proximè sequenti capite.

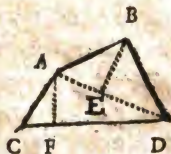
Trapezia sunt figuræ quadrilateræ, quæ nec latera omnia, nec angulos omnes habent æquales.

Horum species variant tam angulorum quam laterum respectu; eas tamen prolixius recēdere hic & supervacuum est, & à nostro proposito alienum. Exempla interim quædam apposuimus, ex quibus Ideam Trapeziorum aliquam Tirones animo suo imprimant. In Schemate primo est exemplum Trapezij cum duobus angulis ad A & B rectis, duobusq; lateribus A B & B D æqualibus: re-



liquis

liquis angulis obliquis & lateribus inæqualibus, AC tamen & BD parallelis. Secundum Schema est Trapezium cum uno angulo ad A Recto, reliquis obliquis, lateribusq; omnibus inæqualibus. In Schemate tertio nullus angulus est rectus, omniaq; latera inæqualia, duo tamen nempe AD & BC parallela. In quarto deniq; Schemate omnes anguli sunt obliqui, omniaq; latera inæqualia, neq; ullum alteri parallelum, &c.



Multilateræ Figuræ sunt, quæ plurâ, quam quatuor, habent latera.

Nec hic opus esse video, ut in plures species has segregemus, quemadmodum nec, ut rationem aliquam Regularitatis vel Irregularitatis habeamus, præsertim cum constet, nō omnī figuræ multi- & æquilatæ à summis in re Mathematicâ Dictatoribus Titulū *Figura Regularis* concedi. Sufficit nosse, figuras quinq; , sex, septem, octo, &c. laterum, quantorumcunq; etiam, Multilateras haberi.

In omnibus autem Triangulatis in genere duo probè advertenda sunt: Resolutio nimirum eorum in Triangula, & collectio vel aggregatum omnium angulorum.

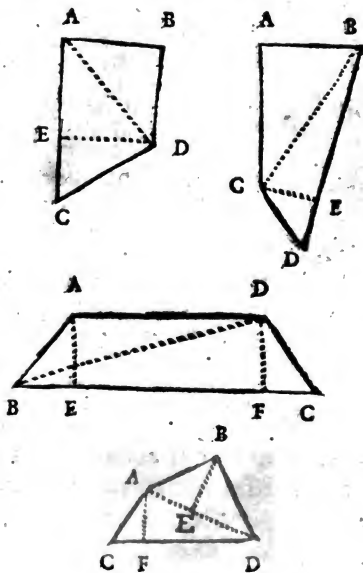
Ex his duobus posterius prioris illius quoddam quasi examen

amenest, ut de resolutione tantò certius & accuratius nobis concludere liceat: ut suo loco olim in Geodasticis ostendetur.

Resolvitur Triangulatum quodvis in Triangula vel quæcunq; prout nata, vel in mera Rectangula.

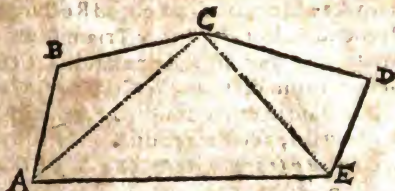
In illa resolvitur, si angulos quoscunq; proximos per lineas rectas connectas.

Ita è proximis Trapezijs primum per lineam AD dividitur in duo Triangula, ABD quidem ad B Rectangulum, ADC verò Obliquangulum: secundum etiam per lineam BC in ABC Rectangulum ad A & B, CED Obliquangulum: nec minus tertium per lineam BD in duo Obliquangula ABD & BDC: & quartum similiter in obliquangula eadem per lineam AD.



Eadem

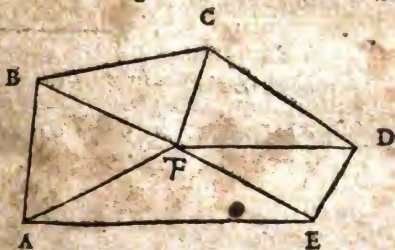
Eadem ratione
& appositum Quinquangulum dividitur
per lineas CE & CA
in tria Triangula AC
E, ABC & CDE
Obliquangula.



Notandum hic in primis hoc resolutionis modo discesci
Quadrangulam figuram in duo, Quinquangulam in tria, uti
apparet, Sexangulam in quatuor, &c. Triangula.

Est & alia resolutio in quævis Triangula, si ad punctum
intra figuram quodvis ex angulis lineæ ducantur.

Nec refert, sitne id
punctum figuræ me-
dium, an verò quod-
cunq; aliud. Sed hac
sectione fiunt tot Tri-
angula, quot sunt fi-
guræ latera: ex Qua-
drângulo nimirum tria,
Quinquangulo quin-
que, Sexângulo sex, &c.

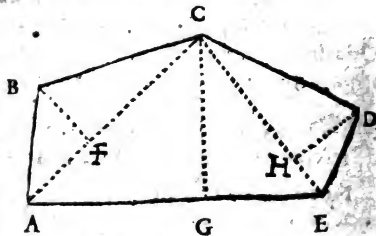


In Triangula Rectangula reducuntur Multilateræ fi-
guræ, si in Triangulis altero à proximo modo reso-
lutis, ex angulis maximis ad latus oppositum Per-
pendicularis ducatur.

Id videre est in duobus Trapezijs pag. 62. primis, quorum pri-
us resolutum est superius in duo Triangula, ABC scilicet ad A
Rectangulum & BCD Obliquangulum, è quibus hoc saltem
hac vi-

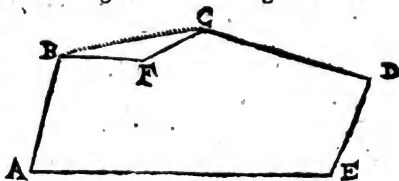
hac vice reductione indiget ad Rectangula. Demisso itaq; ex C Perpendiculo CE , erit & Triangulum CBD Obliquangulum divisum in duo ad E Rectangula CED nimirum & BCE . Eadem ratione dividitur & Trapezium alterum appositum per AD lineam in duo Obliquangula Triangula ABD & ACD , atq; hæc rursus, per perpendicula AF & BE in quatuor Triangula ACF & AFD in F ; item ABE & BED ad E Rectangula.

Par judicium esto de Quinquangulo $ABCD E$ prius in tria Triangula ABC , CDE & ACE resolutum per lineas AC & CE ; in quas, uti & in lineam AE , si ex angulis B , D , & C Perpendiculares BF , DH & CG , deduxerimus:



erunt singula Triangula in bina Rectangula, totumque adeo Quinquangulum in sex Triangula ABF nimirum & BFC ad F ; CHD & DHE ad H ; ACG & CGE ad G Rectangula resolutum.

Quod si etiam Triangulati alicujus Exemplum offeratur, in quo latera duo vicina & contigua introrsus figuram devertant ad exemplum appositum; ubi in Sexangulo $ABCDEF$ duo latera CF & FB intra figuram concedunt: in ejusmodi Exemplis, connexis punctis C & B lineam CB , reducantur figuræ datæ ad alias, uti hic Sexangulum in Quinquangulum. Deinde per præcedentia instituaturs Resolutio.



Angu-

Angulorum, in univerſis Triangulatis ratio quæ ſit, docebunt ſequentia Theorema II.

THEOR. I. Omnes cujuſvis Triangulati anguli æquantur his tot angulis rectis, quorum illud eſt in ordine figurarum Rectilinearum.

Unde, quemadmodum Trianguli, quod Rectilinearum figurarum *jante* à nobis Prima eſt dicta, tres anguli, omnes ſimul ſumti, duobus tantum Rectis æquantur; ita Quadrilaterum Secunda, quam *prius* etiam diximus in duo ad minimum Triangula reduci poſſe, bis duos, hoc eſt, quatuor angulos Rectos habet; vel, quod idem eſt, Quadrilateri quatuor anguli ſimul ſumti æquantur quatuor Rectis. Ita & Quinquanguli figurarum Tertiæ, quodq; in tria Triangula eſt reducibile omnes anguli, bis tribus, vel ſex angulis Rectis æquales ſunt: Sexanguli figurarum Quartæ, in quatuor Triangula reductilis, anguli octo Rectis æquivalent. Idem judicium eſto de reliquis Triangulatis omnibus.

Respondent itaq; omnes anguli

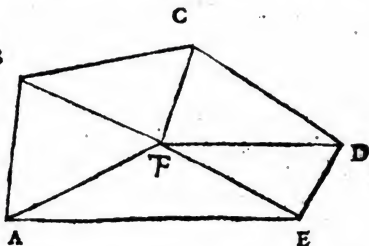
	Trianguli	Quadrang.	Quinquang.	Sexang.	Septang.	Octang.	Ec.
Figurar.	Primæ	IIæ	III.	IV.	V.	VI.	Ec.
Ang. Ris.	2bus.	4.	6.	8.	10.	12.	Ec.

II. Omnes cujuſvis Triangulati anguli æquivalent tot Angulis Rectis, (minus quatuor tamen) quot ipſum habet latera bis ſumta.

Hoc Theorema nihil aliud quidem, quàm præcedens Theorema, concludit: ſed per media alia. Ibi enim ex ordine figurarum inferebatur numerus angulorum Rectorum, quibus anguli cujuſvis figuræ æquivalent: hic ex lateribus. Mens verò Theorematis hæc eſt, ut figuræ alicujus Multilateræ ſeu Triangulati (ſed ejus tamen, cujus omnes anguli ſint interni, nullus autem externus, qualis in proximè antecedenti Schemate erat Angulus CFD) latera omnia bis numeres, ab aggregato

gato quatuor subtrahas : ita enim residuum exhibere numerum angulorum Rectorum, quibus omnes anguli figuræ datæ æquantur.

E. G. esto iterum prius Quinquagulum $ABCDEF$: velimq; scire, anguli ejus quinque, quot Rectis respondeant. Sumtis 5. bis, habebis 10. deme his 4. remanebunt iterum 6. Anguli Recti pro angulis Quinquaguli quæsitis.



Idem judicium esto de ceteris. Ratio autem hujus operationis facile ex Schemate apparet. Sumto intra figuram puncto quocunq; F, connexisq; cum eo punctis A, B, C, D, E, ut supra, erit totum Quinquagulum in quinque Triangula resolutum, quorum uniuscujusvis, (per superiora) anguli duobus rectis æquales sunt : atq; ideò erunt in quinque illis Triangulis 10. anguli Recti. Sed per cap. IV. Anguli quinque ad F punctum simul sumti æquantur quatuor Rectis : detractis ijs à 10. illis, remanebunt Anguli Recti 6. quibus æquantur anguli dati Triangulati à figuræ lateribus comprehensi.

Iterum ergò Omnes Anguli

	Trianguli.	Quadrang.	Quinquang.	Sexang.	Septang.	Octang.
Lateralium	3um	4.	5.	6.	7.	8.
quor. dupl.	6.	8.	10.	12.	14.	16.
demptis quatuor						
resid.	2.	4.	6.	8.	10.	12.

Rectis æquabuntur.

CAPUT

CAPUT XII.

DE

PARALLELOGRAMMIS IN SPECIE, EORUMQUE
sectionibus & comparationibus mutuis.

Cum Parallelogrammorum doctrina copiosissima propter insignem usum
in re Trigonometrica peculiarem sibi locum merito vendicat: malui E-
go ijs hunc titulum proprium præfigere potius, quam, sub Triangulato-
rum copia penè innumera, minus conspicua relinquere.

Parallelogramma ergò omnia sunt figuræ quadrilate-
ræ, adeòq; quadrangulæ, laterumq; alternatim pa-
rallelorum.

Suntq; vel Æquiangula atq; adeò Rectangula, vel inæ-
quiangula seu Obliquangula.

Utraq; insuper rursus vel Æquilatera vel Inæquilatera.

Parallelogramma Æquiangula & Æquilatera dicuntur

QUADRATA: atq; horum anguli omnes necessario
sunt Recti.

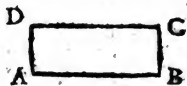
Quia enim figura est quadrilatera & æqui-
angula & Parallelogramma: impossibile est
ut anguli alij esse possint quàm Recti, cum la-
tera necessario ad perpendicularitatem an-
nuant: ut videre est in apposito quadrato AB
CD: præsertim cum inter quadrilateras hæc
sit regularissima, quia æquilatera & æquian-
gula, reliquorumq; quasi norma quædam.



Priori autem capite dictum est quatuor quadrilateri angulos
æquari quatuor Rectis: hic omnes anguli sunt æquales: ergò
quilibet eorum Rectus.

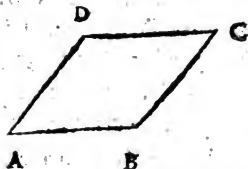
Parallelogramma *Æquiangula* quidem, sed *Inæquilateral*, dicuntur vulgò *παρ' ἑξῆς* PARALLELOGRAMMA : horumq; anguli iterum sunt *Recti*.

Causa *Rectitudinis* Angulorum dependet iterum à ratione figuræ & angulorum æqualitate. Estq; ejusmodi Figura *A B C D*, in qua præter Angulos omnes Rectos latus *A D* æquatur lateri *B C*, eideinq; est *Parallelum* : *A B* verò lateri *D C*, per ea qua superius Theorematibus ultim. Cap. III. sunt dicta.



Parallelogramma *Æquilatera* sed *Inæquiangula*, ideòq; *Obliquangula*, dicuntur vulgò RHOMBI.

Horum exemplum esto figura *A B C D*, cujus omnia quidem latera æquantur : alterna etiam parallela sunt : sed anguli omnes sunt *Obliqui*, æquaturq; *Obtus* *D* *Obtuso* *B*, uti & *Acutus* *A* *acuto* *C*.

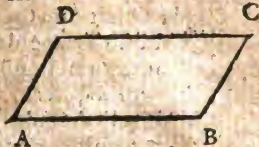


Parallelogramma deniq; & *Inæquilatera*, & *Inæquiangula* dicuntur RHOMBOIDE.

In his autem, itidem ut prius in Rhombis, Anguli obtusi sibi mutuò oppositi æquantur, uti & Acuti : (estque Acutorum unus Obliquorum cujusvis ad duos Rectos complementum :) atq; hoc respectu sunt & Rhombi, & Rhomboide ex parte *Æquiangulæ* figuræ.

Rhom-

Rhomboidis exemplum sic figura $ABCD$ cujus bina saltem latera opposita & parallela nimirum AB & CD , item AD & BC : anguli similiter Obtusi D & B , uti & acuti A & C æquales sunt.



Ex hac tenus dictis apparet etiam, quemadmodum convenientia quædam est, inter Quadrata & Parallelogramma in specie sic dicta ob angulorum Rectitudinem: ita & ob æqualitatem laterum Rhombum Quadrato, Rhomboides verò Parallelogrammo affine esse.

Ceterum Parallelogrammorum in genere omnium consideranda iterum veniunt & reductiones in partes, & comparationes mutæ.

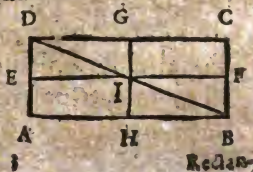
Præcipua Parallelogrammorum divisio fit per Diametrum,

Diameter Parallelogrammi est linea ab Angulo quocunque ad Angulum oppositum ducta: unde & à nonnullis Diagonalis & Diagonius dicitur.

Secat autem Diameter omnia Parallelogramma bivariam, hoc est, in duo Triangula æqualia.

Angulos verò, quos secat, dividit pro figurarum diversitate diversimodè: in Quadratis quidem & Rhombis bivariam, in reliquis inæqualiter.

Facilimum hoc est cuivis vel inveniendi ipsas figuras jam recensitas. Quemadmodum enim appositum parallelogrammum per Diametrum DB in Duo Triangula Inæquilatera



Rectangula dividit : ita Quadratum per suarum Diametrorum utrumvis in duo Triangula *Æquicrura Rectangula* : & Rhombus per Diametrum Angulorum obtusorum in Triangula vel *Æquilatera* vel *Æquicrura* secundæ speciei ; per Diametrum verò Angulorum Acutorum in *Æquicrura Triangula* primæ speciei : Rhomboides deniq; per Diametrum Obtusorum Angulorum in *Inæquilatera Acutangula* ; per Diametrum Acutorum Angulorum in *Inæquilatera Obtusangula*, dividitur. Hæc omnia ut Exemplis & Schematibus demōstrentur, quia facilia, nec opus est, nec per operarum, quibus hæcenus usi sumus, iniquitatem in posterum etiam in magis necessarijs licebit.

Porrò ex sectione Diametri oritur alia quoq;, eaq; secundaria Divisio Parallelogrammorum.

Dividitur enim ea vel bivariam, seu in partes æquales, vel inæquales.

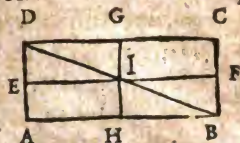
Bivariam dividitur & Diameter & Parallelogrammum vel per aliam Diametrum vel per lineam quamcunq;.

Divisione per duas Diametros dividitur Parallelogrammum omne in quatuor Triangula, quæ quidem in Quadrato omnia sunt æqualia : in Parallelogrammis reliquis inæqualia ; ita tamen ut alternatim posita, seu quæ verticibus suis se mutuò feriunt, æquantur.

Linea Diametrum Parallelogrammi bisecans, si duobus Parallelogrammi lateribus Parallela est, dividet parallelogrammum totum in duo Triangula & duo Trapezia æqualia.

In priori Schemate secat GH linea ad DA & CB parallela
Diamete-

Diametrum BD bifariam in I , ipsum autem Parallelogrammum in duo æqualia Triangula GID , & BIH & duo Trapezia itidem æqualia $ADIH$ & $GIBC$. Idem præstat linea EF lateribus AB & DC parallela.



Si verò per idem punctum medium intersectionis Diametri I transeant simul duæ parallelæ EF & GH , dividetur totum Parallelogrammum in quatuor parallelogramma toti similia, invicem verò æqualia.

Ita Parallelogrammum proximum per lineas EF (quæ lateribus AB & DC), & GH (quæ lateribus DA & BC parallela est) Diametrum DB bisecâtes, dividitur in quatuor alia Parallelogramma nempe $DEGI$, $GICF$, $EAIH$ & $IHFB$ toti $ABCD$ similia. Quod si Quadratum ita secetur, resolveretur id in quatuor Quadrata: Rhombus in 4. Rhombos, Rhomboides in 4. Rhomboide.

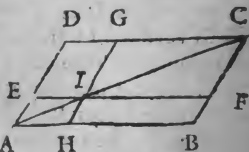
Quod si deniq; Parallelæ illæ in alio quàm medio Diametri puncto se mutuò secuerint, dividetur quidem iterum Parallelogrammum in quatuor Parallelogramma alia, quorum duo quidem toti similia, sed inter se inæqualia; reliqua verò toti dissimilia, inter se verò æqualia sunt.

Illa dicuntur apud Geometras *esse circa Diametrum*, (nec unquam æqualia sunt, nisi cum Diameter tota bisecta est à Parallelis, ut in proximè priori Schemate) eorumq; Diametri sunt partes Diametri totius quomodo-cunq; sectæ.

Hæc verò dicuntur *Complementa eorum qua sunt circa Diametrum*,

trum, nec unquam similia sunt, nisi cum iterum tota Diameter est bisecta, *ut prius*: verum semper, quomodocunque etiam & Diameter & Parallelogrammum totum secetur, æqualia sunt.

In Rhomboide $ABCD$ secant se linea GH & EF laterib9 Rhomboidis parallelæ in Diametri puncto I : resolviturq; propositum Rhomboides in quatuor alia, quarum duo nempe $GIFC$ & $AHIE$ inæqualia quidem, toti tamen $ABCD$ similia, dicuntur circa Diametrum esse, quia Diameter per illa transit: reliqua verò $DEIG$ & $HIFB$, quæ reliquorum complementa dicuntur, & ipsa, & cum toto comparata sunt dissimilia, æqualia tamen: quod inde perspicuum est. Diameter AC dividit totum Rhomboides $ABCD$ in duo Triangula ABC & ADC æqualia. Parallelæ verò GH & EF abscindunt ab illis duobus Triangulis alia quatuor Triangula, quorum binæ semper iterum æquantur. GCI enim Triangulum æquale est Triangulo CIF : & AHI Triangulo AIE . Cum itaq; ab æqualibus, æqualia demantur, necessariò *ex communi illo principio, à naturâ quasi cuius note* residua erunt æqualia. Subtrahuntur verò à Triangulis ADC & ABC , ab illo GCI & IEA Triangula, ab hoc CIF & AIH , quorum illud illi, hoc huic æquale est. Quare & quæ remanent, Rhomboide $DEIG$ & $HIFB$ inter se æquabuntur.



Deniquè cum, Parallelogrammo aliquo ita secto, alterutrum Complementorum abesse fingitur, tum reliqua tria Rhomboide sub *Gnomonis* nomine ab Artificibus exprimuntur,

Excluso ergò primo Parallelogrammo $DEIG$, vocabitur
figura

figura reliqua nimirum $GCFBHA$ EIG Gnomon. Si verò alterum complementum $HIFB$ removeatur, erit reliquum, nempe $HAEDGCFIH$ Gnomon.

Atq; hæc ad sectionem Parallelogrammorum pertinent: de Comparatione Parallelogrammorum inter se teneantur sequentia Theoremata, ijsq; adnumerentur & reliqua Problemata, quæ ad pleniorẽ Parallelogrammorum cognitionem omninò sunt necessaria.

THEOR. I. Ratio Parallelogrammorum in genere omnium, composita est, itidem ut prius in Triangulis, ex ratione Basium & Altitudinum.

Hinc in Quadratis & Parallelogrammis, quia latus lateri perpendiculariter insidit, sumi alterum commodissimè potest loco Basis, alterum loco Altitudinis. Finge ergò vel Basim AB partium 4. in Altitudinem AD aut BC earundem 4. partium: vel contra Altitudinem in Basim duci: & habebis Quadratum $ABCD$ partium 16. sed similiter quadratarum, ita ut earum quævis situ & figura simile sit toti $ABCD$ Quadrato. Ita & in apposito Parallelogrammo $ABCD$ si intelligatur Basis AD partium 4. fluere in Altitudinem AB 3. enascetur $ABCD$ Parallelogrammum partium quadratarum duodecim. ARITHMETICI ex hoc loco Geometriæ mutuati sunt phrasin ducere numerum in numerum. Ut enim prius ex ductu linear AB in lineam AD enascebatur Quadratum $ABCD$: ita si in quatuor ducas, h. e. quatuor in se



K

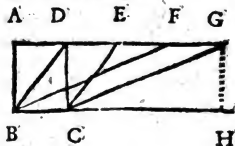
(vel

(vel per 4.) multiplices, prædit alius numerus, & ipse Quadratus, nempe 16, Quadratum illud lineare numeris explicans. Idem accidit in Parallelogrammo altero, cum 3. in 4. ducuntur & prodeunt 12, Numerus iterum Parallelogrammus vel oblongus. Rhomborum autem & Rhomboidum paulò alia ratio est à Quadratis & Parallelogrammis. Cum enim in illis latus lateri non, ut in his, perpendiculariter, sed ad angulos obliquos insistat, non potest, posito laterum uno pro basi, aliud quodcunque pro Altitudine assumi: sed ex angulo obliquo intra Figuram in latus oppositum, vel ex Acuto extra figuram, in oppositum latus continuatum demissum vel erectum Perpendicularum erit Altitudo Figuræ.

THEOR. II. Parallelogramma super eadem vel æquali Basi & inter easdem parallelas constituta, seu æquè alta, sunt æqualia: Æquè alta autem Parallelogramma supra diversas bases inæqualia sunt.

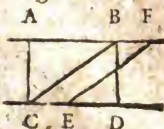
Duo Parallelogramma $ABCD$ & $BDEC$, quorum Basis BC communis est, quæq; inter easdem parallelas AG & BH constituta sunt, seu quæ sunt æquè alta, dico etiam æqualia esse. Æqualitas autem illa vel cuiusvis intuitu manifesta est, ex utriusq; bisectione Diametrali: si maximè æqualitatem Altitudinum non attendamus. Uti enim Diameter BD Parallelogrammum $ABCD$ per prius dicta bisecat in duo Triangula æqualia ABD & BDC : ita & Diameter DC bisecat Parallelogrammum $BDEC$ in duo Triangula etiam æqualia BDC & DCE . Est autem Triangulum BDC utriusq; Parallelogrammi bisegmentum commune. Quare duo illa Parallelogramma $ABCD$ & $DBCE$, quæ ejusdem Trianguli BDC dupla sunt, inter se æqualia sunt. Sed ut æqualitas Parallelogrammorum $ABCD$ & $BFGC$ tantò celerius demonstrari possit, adhibenda est ratio basium altitudinumq; , quæ cum utrobyq;

æqua-



α quales sint (DC enim & GH altitudines α quantur : Basis ve-
rò BC utriq; communis est) arguunt & Parallelogramma illa
 α qualia.

In Schemate autem altero utut Paralle-
logramma $ABCD$ & $BCEF$ eandem altitudi-
nem habent BD : quia Basibus CD & CE vari-
ant, sunt in α qualia.



II. Parallelogramma α quæ alta habent se mutuo ut bases.

In proximè priore Schemate Basis CD Parallelogrammi
 $ABCD$ dupla est basis CE Parallelogrammi $BCEF$: unde &
Parallelogrammum illud hujus duplum est. Si basis unius al-
terius esset tripla vel quadrupla : esset & Parallelogrammum
unum alterius triplum vel quadruplum.

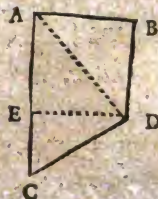
III. Parallelogramma α qualium basium ha-
bent se mutuo ut altitudines.

Iterum ergo Parallelogrammum H
 FGI duplum est Parallelogrammi CAB
 D : bases enim AB & FG α quales qui-
dem sunt : at Altitudo IK Altitudinis D
 E dupla.



IV. Non minus etiam com-
modè, quàm in Triangula, resol-
vuntur in Parallelogramma
quadam Triangulata, inprimis
Trapezia.

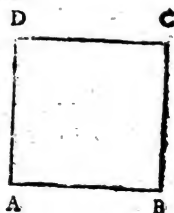
Ita appositorum duo-
rum Trapeziorum prius re-
solvitur in duo Triangula
 ABE & DFC ad E & F Re-
ctangula & Parallelogram-
mum $ADFE$: alterum in
Triangulum CED ad E Re-
ctangulum & Quadratum
 $ABED$.



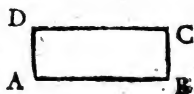
K PRO-

PROBL. I. *Quomodo Quadratum describi debeat.*

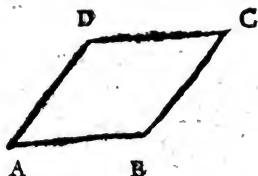
In datæ lineæ rectæ AB extremo altero A erigatur perpendicularis AD æqualis lineæ AB : deinde, beneficio circini, distantia AB vel AD describantur ex D & B duo arcus obsecuri in C sese mutuò interfecantes : tandem ductis lineis DC & BC descriptum erit Quadratum ABCD.

II. *Quomodo Parallelogrammum delineari debeat.*

Datis lineis AB & BC erigatur una alteri perpendiculariter : distantiaq; BC ex A, & AB ex C describantur iterum duo obsecuri arcus sese mutuò in D interfecantes : ductis AD & DC, erit Parallelogrammum ABCD absolutum.

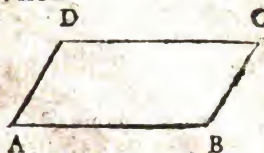
III. *Quomodo Rhombus describi debeat.*

Ad Rhombi constitutionem præter lineam necesse etiam est ut Angulus sive Obtusus sive Acutus detur; quibus datis, anguloq; DAB juxta præceptum cap. VII. p. 37. ad lineam AB applicato, ductaq; AD lineæ æquali ipsi AB, ducantur iterum ex D & B distantia AD vel AB duo arcus in C se mutuò interfecantes. C punctum si cum D & B connexum fuerit : concludetur Rhombus quæsitus.

IV. *Quomodo Rhomboides construi debeat.*

Datis lineis AB & BC, dato item Angulo ABC vel DAB, applice-

applicetur linea AD lineæ AB in dato angulo DAB, deinde ducantur distantia AB ex D, & distantia AD ex B duo arcus sese in C interfecantes. Ductis DC & BC erit Rhomboides ABCD completum.



V. Quomodo dato Parallelogrammo æquale Parallelogrammum constitui debeat super datam lineam rectam & ad angulum datum.

Absq; conditionibus istis facilimum esset Parallelogrammum Parallelogrammo æquale constituere: modo basis & altitudinis ratio habeatur. Quin &, si maxime angulus detur, non usq; adeo difficilis futura esset operatio. Sed cum & angulus & linea datur, paulo diligentius attendendum est.

Esto ergo Parallelogrammum ABCD, cui æquale aliud construi debet, ejus & unum latus æquetur lineæ F, & unus angulus angulo E. Fiat ergo primò Parallelogrammo ABCD dato æquale Parallelogrammum ABHG

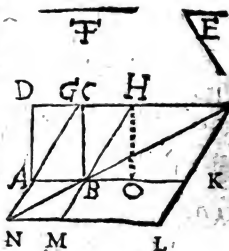


cujus angulus GAB æqualis sit angulo dato E. Esse autem hæc duo Parallelogramma æqualia apparet ex communi basi AB & altitudine BC altitudi-
ni HO æquali. Deinde producantur & GH usque ad I & AB usque ad K ad easdē partes, ita ut HI, vel BK lineæ data F æquantur, ducaturq; linea IB, eademq; uti & AG cōtinuentur usque ad mutuum concursum in N. Tandem distantia GI ex N & distantia GN ex I describantur duo arcus obscuri sese mutuo in L interfecantes: ductis NL & LI, item MB, erit totum Parallelogrammum GILN per sectionem Diametralem IN & parallelas HM & AK in quatuor alia parallelogramma divisum, quorum duo quæ sunt circa Diametrum BHIK & NABM

K 3

inter

inter se inæqualia sunt : reliqua duo autem $AGHB$ & $MBKL$ priorum illorum complementa inter se æqualia sunt *per superiora*. Obtinuimus ergo, quod proposueramus : siquidem Parallelogrammo $ABCD$ Parallelogrammum $MBKL$ æquale construximus supra lineam ML lineæ F & ad angulum BML angulo E æqualem, siquidem Parallelogrammum $MBKL$ Parallelogrammo $AGHB$, hoc autem ipsi $ABCD$ æquatur : æquantur verò etiam lineæ ML & BK data F , anguliq; BML & GAB dato E .



CAPUT XIII.

DE

TRIANGULORUM ET PARALLELOGRAMMORUM
mutuis comparationibus.

Pervenimus tandem eò, cujus gratiâ antecedentem Parallelogrammorum recensitionem instituimus : ad comparationes nimirum Triangulorum, inprimis verò laterum Triangulorum cum Parallelogrammis; quarum comparationum usus infinitus propemodum est & ineffabilis.

Comprehendemus verò omnia sequentibus Theorematibus & Problematibus.

THEOR. I. *Quadratum alicujus lineæ dicitur ejusdem POTENTIA.*

Brevitatis Autores studiosi voce **POTENTIA** & **POSSE** crebrò utuntur. Citius enim nec minus certè dicitur : *hæc linea potest*

potest illas duas; quàm Quadratum huius lineæ æquatur Quadratis illarum simul sumtis: siquidem quævis Recta lineæ tantum posse dicitur, quantum est ejus Quadratum.

II. Linearum equalium equalia sunt Quadrata: & equalia Quadrata habent æquales lineas sive equalia latera.

III. Si quatuor Rectæ Proportionales fuerint, Rectangulum extremarum æquatur Rectangulo mediarum.

Quod hætenus *κατ' ἐξῆς* diximus Parallelogrammum, id in posterum dicemus brevitatís causâ RECTANGULUM, secuti exemplum Euclidis & aliorum Autorum.

Sint ergo quatuor lineæ Proportionales: prima 2. pedum, secunda 3. tertia 6. & quarta 9. Erit ergo

Ut 2. ad 3: ita 6. ad 9.

Ducto extremorum uno nimirum 2. in alterum 9: erit Factus eorum 18. qui & fit, si mediorum unum, puta 3. in alterum 6. duxeris. Quod in numeris accidit: id & in lineis eod. modo succederet, si duo Parallelogramma Rectangula fierent, quorum unius latus unum sit 2. ped. alterum 9: alterius autem unum latus 3. sit, alterum 6. &c.

III. Si tres lineæ Proportionales fuerint: Rectangulum extremarum æquatur Quadrato Mediae.

Datis tribus lineis Proportionalibus, quarum prima sit pedum 3. secunda 6. tertia 12. si ex primâ & tertiâ Rectangulum fiat, vel, si 12. in 3. ducas, prodibunt 36: si verò ex media Quadratum facias, vel, si 6. in se ducas, prodibunt iterum 36. Unde veritas Theorematis satis est conspicua. Idem autem est, ac si diceret:

Ut 3. ad 6: ita 6. ad 12.

Ut ut enim tres tantum dantur numeri: quia tamen medius in proportionē bis sumitur: sunt eorum revera quatuor.

Porro ex hoc & præcedenti Theoremate, non tantum enasci-

enascitur *Aurea* illa Arithmeticorum *Regula Proportionum*, quam vulgò, *Regulam Detri* sive de tribus Numeris Proportionalibus dicunt : sed & ex hætenus dictis ratio per illam Regulam operandi fit evidens. Trium verò numerorum *Regula* quidem dicitur ideò, non quod ex tribus tantum numeris constet (revera enim quatuor terminorum est) sed, quod ex quatuor illis tres dentur, quartus quærat. *Aureæ* nomen inde habet, quod usus ejus sit incomparabilis, nec auro cōtra carus. Cumque nos etiam in seqq. eā Regulā usuri simus, non inconveniens duxi fore, si paulò altius ejus naturam persequar. Ut operatio commodè insitui possit, incumbitur vulgò in eam saltē curam, ut, qui quæritur, ultimū locum occupet terminus. Hinc si, in exemplo proximi Theorematis

(Ut 2. ad 3. ita 6. ad 9.)

tertius terminus ignotus sit, disponuntur noti termini ita, ut 6. in ultimum locum (quia scilicet ignotus est) rejiciatur : concluditurq; *Proportio* ita:

Ut 3. ad 9. ita 2. ad Ignot. Vel:

Ut 3. ad 2. ita 9. ad Ignot.

Deinceps multiplicatur tertius datorum per secundum, factusq; ex ijs dividitur per primum : siquidem ex quatuor Terminorum in quæstionem venientium Rectangulum extremorum æquatur Rectangulo medior. Verum, manente serie terminorum, ut prius,

Ut 2. ad 3 : ita 6. ad 9.

quicumq; terminorum desit, possum nihilominus in ejus cognitionem pervenire. Namq; aut deest extremor. alteruter aut mediorum. Si illud : *multiplicentur dati medij inter se, eorumq; factus dividatur per extremum datum.* Si hoc : *multiplicentur dati extremi inter se, eorumq; factus dividatur per medium datum.* Desit ergo 2.

Ut Ignotus ad 3. ita 6. ad 9.

Factus ex 3. & 6. qui est 18, divisus per 9. exhibet ignotum 2. De-
esto 9.

Ut 2.

Ult 2. ad 3: ita 6. ad Ignotum.

Iterum ergo 18. factus ex 3. & 6. divisus per 2. exhibet 9. Desiat 3:

Ult 2. ad Ignotum: ita 6. ad 9.

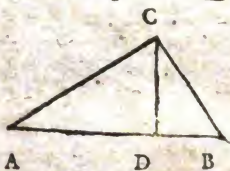
Duc 2. in 9. factum 18. divide per 6. habebis 3. Ignotus sit tandem 6:

Ult 2. ad 3: ita Ignotus ad 9.

18. iterum factus ex 2. & 9. divisus per 3. dabit 6.

P. In Triangulo Rectangulo Perpendicularis ab Angulo Recto in Basis, non tantum Triangulum datum in duo tum totum Triangulo tum inter se similia dissepiscit Triangula: sed & ipsa Perpendicularis Media Proportionalis est inter Basis segmenta: quinimò & utrumlibet eorum Anguli Recti Medium Proportionale est inter totam Basin & basis segmentum ei cruri adjacens.

Aureum plane est hoc Theorema & incredibilis fecunditatis in omni Geometria. Atq; primæ quidem partis Theorematis veritas ex angulorum collatione saltem arguitur. Quia enim, in Triangulo ABC dato, angulus ad C Rectus est, erunt reliquorum ad A & B unus alterius ad 90. complementum: in Triangulo etiam ADC ad D itidem Rectanguli, est iterum angulus ad A anguli ad C complementum ad 90. gr. Atqui angulus ad A utriusq; Trianguli communis est; ideoque & complementum est anguli ad B in Triangulo ABC , & anguli C in Triangulo ADC . Anguli itaq; ABC & ACD , quorum idem est complementum inter se æquantur; ipsaq; adeò Triangula ABC & ADC similia sunt. Ita & in Triangulo BDC Rectus angulus BDC Recto ACB in Triangulo ABC correspondet: & quia angulus DBC utriusq; Triangulo communis; æquabitur necessario iterum angulus DCB angulo CAB : atq; ideo & Triangulum DBC Triangulo ABC simile erit. Ipsa deniq; Triangula ADC & CDB

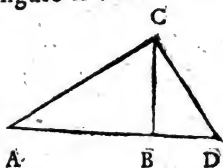


L

similia

similia esse ex paulò ante dictis perspicuum est. Anguli enim ad D sunt Recti & Perpendicularum CD , angulusq; BCD æquatur angulo CAD : uti & angulus DBC angulo ACD .

Ex hac Triangulorum similitudine & angulorum ostensâ æqualitate facillimè infertur proportionalitas laterum in diversis Triangulis æqualibus angulis oppositorum. Ut enim (pro medio Theorematis membro) in Triangulo ADC crus majus AD se habet



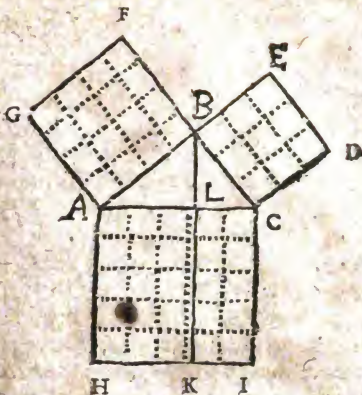
ad crus minus CD : ita in Triangulo CBD iterum crus majus CD sese habet ad crus minus BD . Vel ut BD ad DC : ita DC ad AD . Subjiciemus eadem numeris, qui magis sensibus sunt obvijs. Est latas AB 50. ped. AC 40. BC 30: dividatq; CD perpendiculum pedum 24. basin AB in segmenta AD 32. & DB 18. Erit ergò: Ut AD 32. ad CD 24. ita idem CD 24. ad DB 18. Vel contra ut 18. ad 24: ita 24. ad 32. Medij 24. quadratum 576. utrobiq; æquatur extremorum 32. & 18. Rectangulo 576. ex mente Theorematis.

Nec minus inde sequitur, crurum anguli Recti ACB Trianguli ABC dati utrumvis esse Medium Proportionale inter Hypotenusam seu basin AB , ejusq; segmentum cruri illi adjacens. Ut enim AB basis anguli Recti ACB in Triangulo ABC ped. 50. ad crus majus AC ejusdem Trianguli 40. ped. ita in Triangulo ACD basis AC anguli Recti ADC ped. 40. ad crus majus ejusdem Trianguli AD (seu ad segmentum basis majori cruri adjacens) ped. 32. Vel contra: Ut AD 32. ad AC 40. ita AC 40. ad AB 50. Ita deniq;: ut AB 50. ad BC crus minus 30. ita idem BC ad segmentum basis minus DB 18. Vel contra: ut DB 18. ad CB 30. ita CB 30. ad AB 50.

VI. In Triangulis Rectangulis Quadratum Hypotenusa potest Quadrata crurum.

Triang-

Triangulum ABC est ad B Rectangulum, æquabitur ergo ex mente Theorematis Hypotenusæ AC quadratum ACIH, crurum AB & CB quadratis AGFB & BEDC simul sumtis. Ut veritas Theorematis hujus tantò evidentior sit, ducatur ex B angulo Recto perpendicularis ad basin AC perq; ejus quadratum ACIH. Ea perpendicularis dividit & Triangulum ABC datum in duo alia ALB & B



CL tam inter se tam toti dato similia, & quadratum ACIH in duo Rectangula HALK & CIKL. Constat porro ex proximo Theoremate crus majus AB medium proportionale esse inter totam basin AC vel AH, & basis AC segmentum majus AL cruri majori AC adjacens, hoc est, quadratum ABFG ex crure majore AB descriptum æquari Rectangulo HALK ex basi totâ HA & segmento majori AL descripto. Nam.

Ut AC 50. ad AB 40 : ita AB 40, ad AL 32.

$$\begin{array}{r} 32 \\ \hline 1600 \end{array} \text{ Rectangu-} \quad \begin{array}{r} 40 \\ \hline 1600 \end{array} \text{ Quadr: ABFG.} \\ \text{lum HALK}$$

Ita & perspectum est ex iisdem crus minus BC medium proportionale esse inter totam basin AC vel CI & basis AC segmentum minus LC cruri minori BC adjacens, hoc est, quadratum BEDC ex crure minori BC descriptum æquari Rectangulo LKIC ex basi totâ CI & minori segmento LC descripto. Iterum enim

L 2

ut AC

Ut AC 50. ad BC 30 : Ita BC 30. ad LC 18.

18

30

900 Rectang. LKIC

900 Quadr. BED C.

Rectangula ergo illa duo (HALK scilicet & LKIC) simul sumta constituunt quadratum basis AHIC, quod & ipsum quadratis illis AGFB & BED C æquabitur necessario, siquidem ejus partes *per antecedentia* his æquantur. Quemadmodum enim Rectangula HALK 1600. & LKIC 900. simul sumta 2500. faciunt, vel quadratum AHIC concludunt : ita & quadrata illa crurum AGFB 1600. & BED C 900. eandem summam 2500. constituunt.

Ex hoc Theoremate enascitur primò iterum nova ratio examinandi angulos Rectilineos dubios, (*de quibus supra etiam agimus Cap. VIII. sub finem p. 44.*) sed ex hoc cap. est examen multò certius illo. Ibi enim pensitabatur saltem angulorum æqualitas vel Inæqualitas : hîc verò ad species usq; angulorum penetratur, respondeturq; sit ne dubius aliquis angulus Rectus, vel Acutus vel Obtusus.

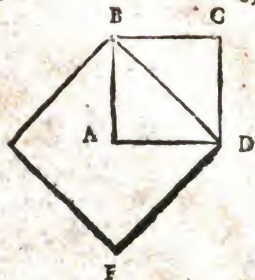
Si enim in Triangulo quocunq; cujus unus angulus dubius est, omniaq; latera sunt cognita, quadratum basis anguli dubij, æquatur quadratis crurum, erit angulus ille Rectus, per proxime antecedentia : Si verò quadratum basis, anguli dubij superaverit quadrata crurum, erit angulus ille Obtusus : si deniq; quadratum basis minus fuerit quadratis crurum simul sumtis, erit angulus ille acutus. Pluribus his inhaerere non est hujus loci : sufficit hæc indicasse paucis.

Deinde etiam ex hoc Theoremate tanquam ex perenni fonte promanant innumera Theoremata & Problemata, è quibus quædam in seqq. delibabimus.

VII. Si Diametro quadrati aliud quadratum fiat, erit hoc illius duplum.

Esto quadratum ABCD, ejusq; Diameter BD : è qua describatur aliud quadratum BEFD : dico hoc illius duplum esse.

esse. Triangulum enim BCD quia est Rectangulum ad C : poterit latus BD latera BC & CD , simul sumta. Aequantur verò BC & CD latera; cum itaq; BD possit eorum utrumque, potest etiam utriusvis duplum, hoc est, quadratum EBD F cujus latus BD , est duplum quadrati $ABCD$ cujus latus BC .



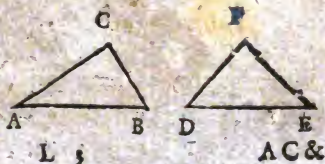
Si numeris eadem subijcere velimus : ponatur diameter prioris quadrati $ABCD$ iterum ut prius, 50. ped. erit quadratum ejusdem Diametri nimirum quadratum $BEFD$ 2500. hujus dimidio 1250. debet correspondere quadratum prius $ABCD$. Quod probandum restat. Radix quadrati 1250. est latus BC 35 | 355339. quod si iterum in se ducatur, prodibant 1249 | 99999 5794921. vel rejectis particulis 1250. pro quadrato $ABCD$, uti decebat.

VIII. Diameter Parallelogrammi potest ejusdem duo quavis latera contigua.

Cum enim Parallelogrammum per superiora in duo Triangula Rectangula dividatur, necesse est ut quadratum Diametri seu hypotenusa alterius anguli Recti quadratis crurum vel dictis Parallelogrammi lateribus per Theorema VI. æquetur.

IX. Triangulorum Rectangulorum Hypotenusa si æquales fuerint, erunt & quadrata crurum unius, quadratis crurum alterius Trianguli simul sumta æqualia.

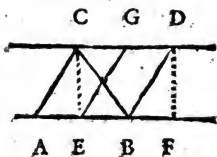
Appositorum duorum Triangulorum ACB & DFE Rectangulorum ad C & F Hypotenusa AB & DE sunt æquales. Dico & quadrata crurum



A C & B C prioris Trianguli A B C simul sumta æquari quadratis crurum D F & F E alterius Trianguli F D E simul sumtis. Quia enim Triangula ambo sunt Rectangula, æquant utique quadrata crurum utriusvis Quadrato Hypotenuse anguli Recti ipsis interjecti *per Theorema VI* : sed & hypotenusa unius Trianguli æquatur hypotenuse alterius Trianguli ; unde non minus quadrata crurum unius Trianguli æqualia erunt quadratis crurum alterius.

X. Si Parallelogrammum cum Triangulo eandem basin habuerit, fuerintq; ambo intra easdem Parallelas seu æquæalta, erit Parallelogrammum Trianguli duplum.

Habeat Parallelogrammum A B C D. cum Triangulo A B C eandem basin A B : æqueturq; altitudo Trianguli C E altitudini Parallelogrammi D F : erit Parallelogrammum Trianguli duplum. Quod vel inde manifestum est, quod superius diximus, quia C B latus Trianguli Diametere est Parallelogrammi, atq; vel ideò illud in duo æqualia Triangula, quorum unum datum A B C, alterum C B D, dividit. Parallelogrammum verò E B D G, etsi non ita bisecatur, a b aliquo latere Trianguli C E B, est hoc tamen nihilominus illius dimidium, cum utriusq; basis sit communis, altitudinesq; iterum æquales.



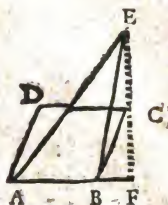
XI. Si Triangulum duplam basin habuerit Parallelogrammi, fuerintq; ambo æquæalta, erunt æqualia.

Ergo in priori Schemate quia A B C Triangulum basin A B duplam habet basis E B Parallelogrammi E B D G, altitudinesq; C E & D F iterum, ut prius, æquantur : veritas satis in promptu, & manifesta est hujus Theorematis vel ex collatione hujus cum proximè antecedente.

XII. Si Triangulum & Parallelogrammum eandem basin habuerint :

rint : altitudo autem Trianguli dupla fuerit ad altitudinem Parallelogrammi : erunt ambo æqualia.

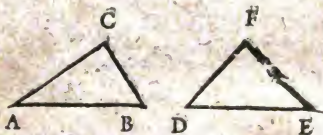
Prius ex dupla Trianguli basi, æquali autem altitudine concludebatur utriusque æqualitas : jam æquè certè æquatur Triangulum ABE Parallelogrammo $ABCD$, quia basis AB communis, altitudo autem Trianguli EF dupla respectu altitudinis Parallelogrammi CF .



Sequuntur Problemata.

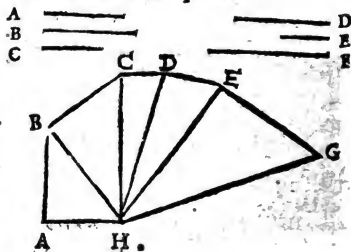
PROBL. I. *Datis duobus quadratis inæqualibus quomodo alia duo quadrata inveniri debeant, quæ & æqualia inter se sint & simul sumta æqualia etiam duobus prioribus inæqualibus quadratis datis.*

Sunt datae duæ lineæ AC & CB inæquales, quarum potentia necessario etiam æquales sunt : sintq; inveniendæ aliæ duæ lineæ inter se æquales, & quæ si simul sumantur, idem possint, quod priores datæ simul sumtæ. Applicetur una alteri ad perpendicularum ita, ut in concursu mutuo ad C angulum Rectum faciant, connectanturq; earum extrema reliqua A & B per lineam AB . Deinde sumatur DE linea lineæ AB jam ductæ æqualis, describaturq; super eâ juxta *Probl. V. cap. VI. p. 33.* Triangulum Rectangulum Equicrurum, ut scilicet DF & FE crura anguli Recti DFE æqualia fiant. Quia igitur hypotenusæ AB & DE æquantur in utroq; Triangulo Rectangulo, necessario etiam per *Theorema IX. hujus capituli* æquabuntur quadrata crurum DF & FE Trianguli DEF simul sumta, interq; se æqualia quadratis crurum CA & CB Trianguli ABC , ex mente Problematis.



II. *Quomodo datis quadratis quocumq; sive equalibus sive inaequalibus inveniri possit aliud quadratum omnibus illis æquale.*

Dentur appositæ lineæ sex, A, B, C, D, E, F, quomodocumq; sumtæ, ex quorum quadratis omnibus conficiendum sit quadratum aliud omnibus illis simul sumtis æquale. Primò ergò sumatur lineæ A H æqualis lineæ A datæ, erigaturq; in puncto ejus A lineæ A B æqualis li-

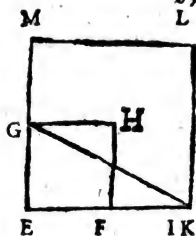
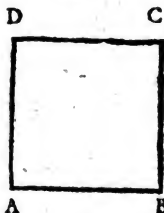


neæ B datæ perpendiculariter : deinde connectantur extrema utriusq; lineæ puncta B & H per Rectam B H, eritq; A B H Triangulum ad A Rectangulum, poteritq; hypotenusæ B H utrumque crus A H & A B sive lineas A & B. Deinceps erigatur in B Hextremo altero nimirum in B lineæ B C æqualis lineæ C datæ etiam perpendiculariter, ducaturq; hypotenusæ H C, quæ iterum potest crura B H & B C seu lineas A, B & C. Iterum in puncto C lineæ C H extremo erigatur C D lineæ D æqualis itidem perpendiculariter, poteritq; D H, lineas A, B, C & D. Idem si feceris cum lineis E & F, habebis tandem lineam G H cujus quadratum quadratis omnium datarum linearum A, B, C, D, E & F æquatur.

III. *Quomodo datis duobis quadratis alteri illorum figura adscribi debeat, quæ reliquo quadrato sit æqualis, ita ut totum compositum etiam sit quadratum.*

Sunt ergo duo quadrata A B C D majus, & G E F H minus : debeatq; unum alteri ita adscribi, ut figura uni Quadrato adscripta sit reliquo æqualis, totaq; insuper figura & ipsa quadrata. Si solummodo quadratum posceretur utriq; datorum simul sumtis æquale : succederet id beneficio Trianguli G E I,

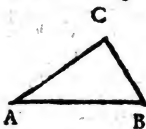
$G E I$, per proximè antecedens Problema : sed quia & Gnomon adscriptus in quæstionem venit, paulò alia est ab eà hæc operatio. Est ergo minori quadrato $G E F H$ adscribendum ijs conditionibus majus $A B C D$:



continuetur minoris latus $E F$ usq; ad I , ut $E I$ æquetur lateri $A B$ majoris, ducaturq; Hypotenusæ $G I$, quâ iterum in latus $E F$ & $E G$ transposita, ut ipsi $G H$ & $E K$ & $E M$ æquantur, concludatur miore solito $E M L K$, quod necessario quadratum est ex ratione constructionis, quia scilicet super hypotenusâ $G I$, quæ & $E F$ & $A B$ potest, constructum est : imo & Gnomon $G M L K F H$ G , si à quadrato illo $E M L K$ abstrahatur, æquabitur necessario quadrato majori $A B C D$.

IV. Datis duabus lineis inæqualibus, quomodo inveniri debeat id, quod major plus potest, quam minor.

Dantur lineæ $A B$ major & $A C$ minor : quæriturq; quanto plus possit $A B$ quam $A C$. Describatur super lineam majorem $A B$ per



Probl. V. Cap. VI. p. 33. Triangulum Rectangulum inæquilaterum, sitq; crus majus ejus Trianguli æquale lineæ minori datæ $A C$: erit ergò $B C$ crus minus id quod quærebatur, hoc est, lineæ $B C$ potentiâ deficit potentia lineæ $A C$ à potentiâ lineæ $A B$. Cum enim Triangulum sit Rectangulum ad C , poterit utiq; $A B$ latera $A C$ & $B C$ simul sumta.

V. Quomodo, cognitis duobus lateribus quibuscumq; Trianguli Rectanguli, latus reliquum inveniri possit.

In proximè priori Schemate, cum Triangulum sit Rectangulum, & $A B$ hypotenusæ Anguli Recti, reliqua verò latera ejusdem

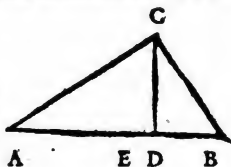
M

jussidem

jusdem anguli crura : datis eorum quibuscunq; duobus, dico reliquum etiam in cognitionem venire. Quia enim hypotenusâ potest crura simul sumta : datis cruribus, habetur hypotenusâ, additis illorum potentijs : datis verò Hypotenusâ & crure alterutro, habetur crus reliquum, si potentia cruris dati à Potentiâ Hypotenusâ subtrahatur.

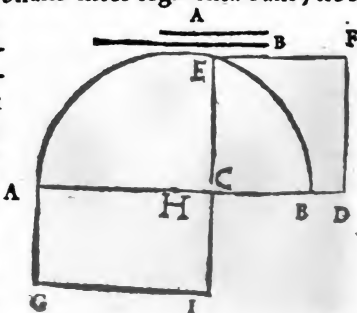
VI. Quomodo, datis duabus lineis rectis Media proportionalis inveniatur.

Omnis & Praxis & Demonstratio hujus Problematis dependet ex Theoremate V. hujus Capituli. Datis enim lineis duabus AD majori & DB minori, componantur ex primùm in directum, ita ut composita AB utriq; AD & DB datis simul sumtis æquetur : deinde ex D erectâ perpendiculari DC quantâcunque, & ex E compositæ lineæ medio descripto semicirculo per Probl. VI. cap. VII. p. 34.



obscuro, ductisq; lineis AC & BC ad semicirculi & prioris perpendicularis concursum, erit Triangulum ABC in C Rectangulum, & AB anguli Recti hypotenusâ, ipsaq; aded perpendicularis CD media proportionalis inter segmenta basis, hoc est, inter datas AD & DB.

Non est tamen opus, ut Triangulum superius semper repetatur : sufficit enim, ut ex C concursu mutuo datarum linearum A & B, seu in schemate adjecto AC & BC (modò prius ex H compositæ medio semicirculus AEB descriptus sit) perpendicularis erigatur, quæ in E semicircu-



lum,

lum aut secet, aut cum eodem concurrat. Ea ipsa enim CE linea erit iterum Media Proportionalis inter lineas A & B datas, &c.

Ex hoc porro Problemate instar consecutarij promanat & Problema sequens.

VII. Quomodo dato Parallelogrammo aequale quadratum consruatur.

Quæraturn inter duo latera AC & CI dati Parallelogrammi (proximi schematis) media proportionalis EC , describaturq; ex ea quadratum $CEFD$.

VIII. Quomodo datis duabus rectis lineis tertia Proportionalis habeatur.

Sunto duæ lineæ AD & DC datæ, quærendaq; sit tertia Proportionalis, ad quam scilicet DC se habeat, ut AD ad DC ; vel quæ se ad DC habeat ita ut DC ad AD . Quomodo in numeris id fiat, constat ex ijs, quæ ad Theorema hujus Capituli IV. dicta sunt. In lineis etiam processus est facilimus. In schemate Problem. VI. primo erecta minori CD ipsi majori AD perpendiculariter, connectantur puncta A & C per Rectam AC ; erigaturq; ex C linea CB lineæ AC perpendicularis, ad cujus concursum in B si linea AD continuetur erit DB linea quæsita. Ut enim se habet AD ad DC ita DC ad DB per superiora.

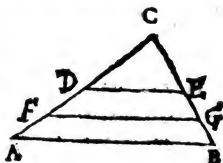
IX. Quomodo datis tribus rectis lineis quarta proportionalis haberi possit.

In numeris expedita superius Theor. IV. est ratio operandi: nec difficilior in lineis videbitur hoc loco. Si enim duæ vel tres lineæ dentur continuè proportionales, facilimum fuerit, in primo casu tertiam, in secundo quartam, quin & in infinitum quintam, sextam; &c. Proportionalem invenire ex Probl. Ult. Cap. VII. Si verò tres dentur lineæ, quartaq; quæraturn in proportionem disjuncta, commodissimè id fiet sequenti modo. In schemate (Capituli IX. de Trianguli sectione Parallelâ) sunt tres

M 2

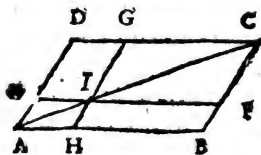
lineæ

lineæ CD , DA & CE data, quærendaq; sit quarta ad quam CE ita se habeat, ut CD ad DA . Componentur datarum prima & secunda CD & DA in directum ut lineam CA referant, appliceturq; tertia CE primæ in extremo puncto, angulo quocunq;. Connexis D & E punctis per lineam DE , ductâq; eidem DE Parallelâ AB usq; ad mutuum concursum lineæ CE continuatæ usq; ad B , erit EB quarta Proportionalis quæsitâ : ut enim CD ad DA ita CE ad EB . &c. Demonstrationem hic repetere non est opus.



Sed & ex schemate pag. 72. & sectione Parallelogrammi, de qua ibi actum, non minus jucundè & commodè idem habebimus. Sint enim datæ tres lineæ EI ,

IF & HI , quæraturnq; iterum quarta proportionalis. Compositis iterum datarum linearum primis EI nimirum & IF in directum, applicatâq; illis in concursus puncto I angulo quocunq; tertiâ HI , conclu-



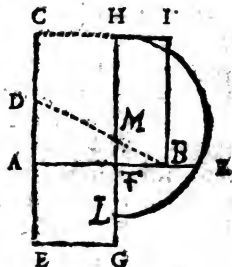
dantur ex EI & HI , item ex HI & IF duo Parallelogramma EIH & $IFBH$, ducaturq; in illo Diameter AI continuanda usq; ad C mutuum concursum lateris BF producti. Conclulso tandem toto Parallelogrammo $ABCD$ beneficio linearum AB & BC , continuatâq; lineâ HI usq; ad G , erit GI quarta proportionalis quæsitâ : hoc est, ut EI ad IF , ita erit IH ad IG . Jam enim superius demonstratum est, Parallelogramma $DEIG$ & $HIFB$ æquari ; ex 14. autem prop. VI. Elementor. Euclidis constat equalium Parallelogrammorum latera circa æquales angulos esse reciprocè proportionalia : hoc est, ut majus unius ad minus alterius, ita majus hujus ad minus illius : vel, ut minus unius ad majus alterius, ita iterum reciprocè minus hujus ad majus illius.

X. Quo-

X. Quomodo linea aliqua secari debeat mediâ & extremâ ratione: hoc est, ut tota sese habeat ad segmentum majus ita, ut idem segmentum majus se habet ad minus.

Autores hanc *Proportionem Divinam* vocant ob insignes & admirandos ejus usus: lineam autem hoc modo sectam dicunt per excellentiam quondam *sectam vel divisam proportionaliter*.

Si ergo linea AB ita dividi debeat, ut tota AB ad segmentum majus se habeat, ut idem majus ad minus: erigatur primò ex A termino dato lineæ alterutro perpendicularis AC (vel, quod eodem recidit, super datâ AB describatur quadratum ACIB) bisectâq; lineâ AC in D, transferatur distantia DB ex D usq; ad E, continueturq; CA linea usq; ad E, distantia insuper continuationis AE abscindatur ex AB segmentum majus AF, quod necessario Medium proportionale



quæsitum erit inter AB lineam datam & FB segmentum minus; quò nomine & quadratum AFGE segmenti majoris AF æquabitur Parallelogrammo FHfB, quod ex ductu FB segmenti minoris in lineam IB vel datam AB fit. Demonstratio evidens est ex *Problemate VI*. Si enim latera Parallelogrammi HF & FB in directum cõponantur, ita ut HL ambabus simul sumtis æquetur, bisectâ eâ in M, exq; bisectionis puncto descripto semicirculo HKL, æquabitur utiq; FK Media Proportionalis inter latera dicta lineæ AF, quæ segmentum majus prius dicebatur, interq; totam AB & segmentum minus FB etiam media Proportionalis erat.

Ex hoc porro *Problemate* Consectarij instar enascitur & sequens *Problema*.

XI. Quomodo dato quadrato æquale Parallelogrammum construi debeat.

M 3

Sic

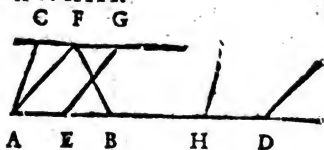
Sit in priore schemate quadrato $ACIB$ æquale Parallelogrammum faciendum, fiantq; omnia ut prius: dico Parallelogrammum $ECHG$ esse id quod queritur. Siquidem enim ex dictis constat quadratum $AFGE$ æquari Parallelogrammo $HIBF$: Parallelogrammum $ACHF$ verò tam quadrato quam Parallelogrammo prioribus commune est, de vero nemo ambiget.

Clavius in Scholio undecimæ Prop. II. element. Euclidis uti & ad 14. & 29. pr. IX. demonstrat alterum ab hoc Problemate, atq; ideò nec hoc, numeris accommodari posse: quod de integris omninò verum est. At nihil obstat, quo minus per numeros, numerorumq; particulas satis propè ad verum collimemus. Estò enim data linea AB 100. part. & AD 50. erit illius quadratum 10000. hujus 2500. ergo quadratum lineæ DB 12500, ipsaq; adeo DB 111 | 8034 --, cumq; DE ipsi DB æquetur, erit AE vel AF 61 | 8034 -- & GB 38 | 1966 + totaq; insuper CE 161 | 8034 --. Ex quibus, si calculum, uti par est, instituas, invenies quadratum $AEGF$ 3819 | 66025156 -- Parallelogrammum verò $FHIB$ 3819 | 6600 + quæ non multum etiam in extremis cûlis variant. Atq; hi sunt numeri Problematis X. Pro AL jam notum est quadratum $ACIB$ 10000: Parallelogrammum verò $ECHA$ est 10000 | 00025156 -- quæ iterum satis conveniunt.

XII. *Quomodo dato Triangulo æquale Parallelogrammum construi debeat in dato angulo.*

Siquidem per superiora Parallelogrammum cum Triangulo æquale tû, eandemq; basin habens Trianguli duplum est &c. facillimum fuerit illud huic æquale facere, si nimirum aut Trianguli altitudo aut basis bifecetur, Parallelogrammumq; ita concludatur, uti factum in hujus capituli Theor. IX. Sed quia & angulus in Problemate insuper datur, ejus etiam necessariò ratio habenda est. Sit datum Triangulum ABC , cui æquale Parallelogram-

lelogrammum construi debeat, cujus unus aliquis angulus æquetur angulo D dato. Bifecetur Trianguli AB C dati basis AB in E, appliceturq; ad A vel E angulus D ut (ductâ tamen prius lineâ C G ad lineam AB Parallelâ) F A E angulus vel G E B dato æqualis fiat, eritq; Parallelogrammum A F G E Triangulo dato æquale.



XIII. Quomodo dato Parallelogrammo æquale Triangulum construi debeat, cujus unus angulus æqualis sit dato angulo.

Nisi angulus iterum requireretur, describeretur super duplicatam basin Parallelogrammi Triangulum æquealtum, quomodo cunq; Sed dato præter Parallelogrammum A F G E etiam angulo H, applicetur basi Parallelogrammi A E duplicatæ, hoc est, lineæ AB in ejusdem extremo altero, puta in A, angulus H, hoc est, fiat angulus C A B angulo H æqualis (necesse tamen iterum est ut C G lineâ lineæ AB æquidister) ductâ deniq; lineâ C B erit Triangulum A B C Parallelogrammo A F G E æquale factum, æquabiturq; unus ejus angulus nimirum C A B angulo dato H ex mente Problematis.

XVI. Quomodo ad datam rectam lineam dato Triangulo æquale Parallelogrammum construi debeat in dato præterea angulo.

Primo juxta Problema XII. fiat dato Triangulo æquale Parallelogrammum in dato angulo; deinde applicetur & lineâ data, fiatq; ad illam aliud priori æquale juxta Probl. ult. Cap. XII.

XV. Quomodo ad datam rectam lineam, dato Parallelogrammo æquale Triangulum constitui debeat in dato angulo.

Principio fiat dato Parallelogrammo æquale Triangulum quaecunq; per Probl. XII. hujus Cap. deinde iterum per Probl. ult. Cap. XII. fiat eidem Parallelogrammum aliud priori æquale ad

le ad datam rectam lineam & in dato angulo : tandem fiat huius Parallelogrammo æquale Triangulum per *Probl. huius Cap. XIII.* ita ut unum ejus latus unusq; angulus communes sint Triangulo & Parallelogrammo.

XVI. Quomodo ad datam rectam lineam dato Triangulo æquale Parallelogrammum confici debeat in dato angulo.

Triangulatum resolvatur in Triangula quam paucissima, fiantq; singulis Triangulis singula Parallelogramma ad datam rectam lineam inq; dato angulo æqualia per *Probl. XIV. huius capitis* : deinde singula hæc Parallelogramma ita componantur per latera æqualia, ut totum compositum iterum sit Parallelogrammum.

XVII. Quomodo dato Triangulo æquale Quadratum construi debeat.

Fiant omnia juxta Problema proximè præcedens : tandem composito Parallelogrammo construatur æquale quadratum per *huius Cap. Probl. VII.*

XVIII. Quomodo datis duobus Triangulis inæqualibus, excessus majoris supra minus haberi possit.

Si excessum illum in forma Parallelogrammi habere vis, fac ex utrovis Parallelogramma similia, ad eandem nempe lineam eundemq; angulum per *Probl. XVI.* Compositum minus à composito majori si subtraxeris, habebis excessum quæsitum. Sin verò excessum illum vis habere quadratum, tum ex utroq; Triangulo fac Quadrata singula per *Probl. XVII. huius Cap.* deinde per *Probl. II. huius etiam Capitis* investiga excessum quæsitum.

XIX. Quomodo dato Rhombo vel Rhomboidi æquale Parallelogrammum aut Quadratum etiam construi debeat, absq; resolutione in Triangula.

Appositum Rhomboides *ABCD* esto transformandum in Parallelogrammum Rectangulum. In *A* & *B* extremitatibus
basis

basis AB erigantur perpendiculares AD & BF continueturq; DC usq; ad F , quo facto, æquabitur Parallelogrammum $ABFI$ Rhomboidi $ABCD$ dato, ob communem basin AB & æquales altitudines. Idem fiat in Rhombis etiam.



Quin & in Trapezijs, quæ opposita latera Parallela habent, quale in priori schemate est $AICB$, cujus latera IC & AB Parallela sunt, eadem celeritate petatum obtinemus, si nimirum tam ex minori quam ex majori latere Parallelo perpendiculara erigantur, ex illo nimirum ab IC perpendiculum CE ex hoc vero videlicet AB perpendiculum BF , ipsumq; latus IC iterum usq; ad F continuetur, ut CF æquale fiat ipsi EB . Tandem bisectionis CF & EB in G & H ductaq; lineâ GH , habebimus Parallelogrammum $AIGH$, quod quærebat, æquale Trapezio $AICB$. Quod si Trapezium aliquod ex utraq; parte acclivitates habeat, quale est id, quod *p. 61.* primo loco exstat, fiat ex alterâ etiam parte id, quod jam ostensum est.

CAPUT XIV.

De

LINEARUM ET LINEATORUM IN

Circulum adscriptionibus.

Quia hætenus nudè & absolutè absq; respectu ad Circulum tractavimus, Lineas & Lineatas, ea jam denuo tentanda, & quæ symptomata patiantur septo Circulari inclusa, videndum esset fusius.

Quia verò & præcedentia sub manu latius sese diffuderunt, interim dum omnia necessaria & conquisivimus & perspeximus, & horum tractatio etiam in volumen justum accrescere posset, quàm facillimè: contrahemus & pertractabimus omnia quàm confisissimè uno hoc capite, ut ad reliqua tansò citius transscendere queamus.

Atq; principio quidem Lineæ, deinde Lineatæ, quatenus circulis adscribuntur, contemplabimur.

Circulus est figura plana unicâ lineâ comprehensa, quæ undiquaq; omnibus suis partibus à puncto exactè intermedio æqualiter abest.

Id verò punctum vulgo *Centrum Circuli* appellatur.

Linea autem Circulum comprehendens *Ejusdem Circumferentia* dicitur.

Quæ porro ipsi Circulo adscribuntur Lineæ, ex sunt aut primariæ aut secundariæ.

Primariæ sunt Radij & Diametri, quarum illæ harum respectu etiam dicuntur Semidiametri.

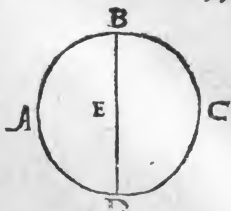
Radij sunt Lineæ Rectæ ex centro ad circumferentiam exeuntes : atq; hæ omnes, quotquot in circulo aliquo duci possunt (possunt verò innumeræ duci) inter se æquantur.

Diameter est linea Recta à puncto aliquo circumferentiæ ad oppositum per centrum ducta : hæc circulum & Circuli circumferentiam semper bisecat, estq; nihil aliud, quàm duo Radij Circulares in directum compositi.

Possunt etiam, itidem ut Radij, Diametri innumeræ in quovis circulo describi.

In apposito schemate est exemplum Circuli, cujus circumferentia *ABCD*, centrum verò est *E*, totius circuli medium. Ab hoc linea *EB* ad circumferentiameducta dicitur Radius vel Semidiameter circuli, uti & *ED* : tota autem *BD* ex *BE* & *ED* com-

ED composita dicitur ejusdem Diametri. Ejusmodi autem & Radij ex centro E ad quodvis punctum circumferentiæ, & Diametri ex quocunq; circumferentiæ puncto per centrum E ad punctum priori oppositum omnino possunt duci, uti dictum, innumeræ. Quia deniq; centrum E est totius figuræ punctum intermedium, nemo dubitare poterit, quin Diameter per medium transiens & circulum, & circuli circumferentiam in duo æqualia ABED & BEDC dispescat.



Diametri etiam diversorum circulorum sunt medium comparationis eorundem.

Siquidem circuli, quorum Diametri sunt æquales, & ipsi æquales sunt.

Circuli verò, quorum diversæ sunt Diametri, & ipsi differunt, majorq; est ille circulus, cujus Diameter est major; minor ille, cujus Diameter minor.

Imò Circulus ad Circulum ita se habet, ut Quadratum Diametri unius circuli, ad Quadratum Diametri alterius.

Secundariæ lineæ Circulo adscriptæ sunt vel intra circumferentiam ejusdem, vel eandem aut secant aut foris attingunt.

Quæ intra circumferentiam, ex 1. aut ad Diametrum Parallelæ sunt aut non: 2. aut cum eâdem concurrunt, aut eandem intersecant.

Linearum ad Diametrum & inter se Parallelarum ma-

xima quidem est ipsa Diameter, quæq; Diametro sunt proximæ: cæteræ omnes minores, ita ut quæ à Diametro remotissimæ, ex omnium sint minimæ.

Possunt tamen è Parallelis istis binæ semper lineæ æquales esse, quæ scilicet utrimq; æqualiter à Diametro remotæ sunt.

Quæ verò non æquidistant omnibus suis partibus à Diametro, earum nihilominus quantitas æstimatur è majori minorive cujusvis à suâ, cui quævis Parallela est, Diametro, vel potius à distantia à centro circuli.

Lineæ cum Diametro concurrentes 1. aut ad Diametrum perpendiculares sunt, aut quamvis cum eâ angulum faciunt: 2. aut in puncto Diametri medio seu centro cum eâdem concurrunt, aut in puncto ejus alio.

Concurrentes in centro cum Diametro, (exq; sive perpendiculares sive non) omnes sunt æquales, quia Radij sunt circuli.

Perpendicularium vero ad Diametrum omnium maxima est, quæ in centro eidem perpendicularis est (quia Radius): reliquarum, quæ huic propiores, majores; quæ ab eadem remotiores, minores sunt; omnium autem remotissimæ, minimæ sunt.

Possunt tamen binæ semper ejusmodi perpendiculares æquales iterum esse, quæ scilicet utrimq; à maximâ æqualiter distant.

Quæ

Quæ verò in alio quàm medio Diametri puncto cum eadem concurrunt, Diametrumq; in inæquales partes dividunt, earum, quæ majori Diametri segmento sunt propiores, majores sunt, reliquæ, quò magis ab eodem segmento removentur, eò breviores fiunt; omnium deniq; brevissima est, quæ proximè minus Diametri segmentum.

Si tamen ex utraq; Diametri parte exq; eodem ejus puncto, numero æquales, distantijsq; utrimq; æqualibus, plures lineæ ductæ fuerint : æquabuntur iterum binæ semper lineæ, quæ scilicet utrimq; æqualiter à majori minorive Diametri segmento absunt.

Lineæ porrò Diametrum Circuli intersecantes, iterum aut ad rectos aut ad obliquos eam secant.

Linea, quæ Diametrum ad angulos rectos intersecat, eadem per Diametrum bisecatur.

Hinc facillimum fuerit sequentium Problematum praxin instituerè.

PROBL. I. Quomodo dati Circuli Centrum inveniri debeat.

Dato circulo, cujus centrum nescias, duc lineam intra circumferentiam ejusdem quamcunq; , eamq; biseca, & per punctum bisectionis duc aliam lineam priori ad angulos rectos, quam si iterum bisecueris, erit punctum bisectionis centrum circuli quæsitum.

II. Quomodo dati segmenti (vel arcus) Circularis centrum inveniri, ipseq; adeo circulus ex eo segmento compleri & perfici debeat.

Dato segmento Circuli, divide illud per punctum quod

N 3

cunq;

cunq; in duas (æquales an inæquales eæ sint parum refert) partes: deinde ex uno termino arcus ad punctum illud, duc lineam rectam, item ex eodem puncto ad extremum reliquum alterum: lineas ita ductas si bifecueris, exq; bisegmentorum punctis perpendiculares erexeris, videbis ibi esse centrum quæsitum, ubi illæ perpendiculares sese interfecabunt; ex quo nimirum centro & prius segmentum ductum fuit, & totus circulus complendus est.

III. Quomodo datis tribus punctis, quantum inveniri debeat, ex quo tanquam ex centro circulus per tria puncta illa data transiens duci possit.

Cavendum autem hic imprimis, ne data puncta eo situ dentur ut, si connectantur per lineas rectas, connexionem illam lineam rectam constituent. Hoc ubi cautum fuerit, connecte primò punctum primum & secundum per lineam rectam, eamq; biseca & in bisegmento lineam aliam ad angulos rectos trajice: deinde connecte & punctum secundum cum tertio (vel quod perinde est primum cum tertio) per aliam lineam rectam, quam si iterum biseces, perq; bisectionis punctum lineam aliam trajicias, videbis hanc trajectorym priorem in certo aliquo puncto interfecare. Illud ipsum autem punctum est centrum circuli ducendi per data illa tria puncta quæsitum.

Quomodocunq; autem sive semicirculus per aliam rectam dividatur sive aliæ duæ rectæ quæcunq; ad angulos etiam quoscunq; intra circulum se mutuò fecuerint, æquabitur Rectangulum è segmentis unius, Rectangulo è segmentis alterius. *Per 35. III. elem:*

De Lineis circumferentiam circuli *Tangentibus* autem & *Secantibus* agetur commodius deinceps *Lib. II.*

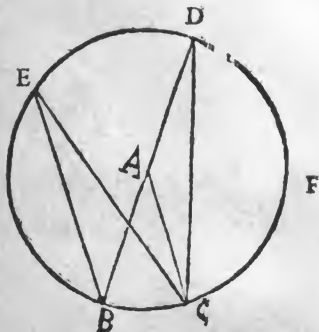
Sequitur de Angulis in Circulo.

Angu-

Anguli, qui hoc loco in considerationem veniunt, sunt vel Mixtilinei vel Rectilinei.

Illi dicuntur vulgò *Anguli Sectionum vel Segmentorum Circularium*, comprehendunturq; à lineâ Rectâ & arcu circuli.

Tales autem anguliparum vel nihil ad Trigonometriam conferunt : suntque in appposito Schemate anguli ADF & ABC , quos Diameter BD & Semicirculus BCD comprehendunt : item anguli BCD & EDC , quos in segmento circuli $DEBC$ majore quam Semicirculo linea Recta CD & Arcus $CBED$ constituunt. Et deniq; anguli FCD & CDF in segmento minore, quos linea CD & arcus semicircumferentiâ minor concludunt.



Anguli Rectilinei sunt vel in solis segmentis circularum, vel in ipso Circulo.

Cumq; segmenta Circularum sint aut Semicirculi, aut Semicirculis majora, minoravè, erunt & anguli alij in Semicirculis, alij in segmentis Semicirculo majoribus, alij item in segmentis Semicirculo minoribus.

De his angulis in genere omnibus primò sciendum est, Angulos, quotquot in eodem segmento dari possunt,

sunt, omnes invicem æquales esse : *Per 20. III. Elem:*
Deinde angulos in quocunq; segmento eandem cum
ipso segmento basin habere.

Anguli autem in Semicirculo omnes sunt Recti : in
segmento majore Acuti : in minore deniq; Obtusi :
Per 30. III. Elem:

Hinc iterum exoritur alius modus probandi angulos du-
bios, sintne Recti an verò Obliqui. Si enim *per Probl. III. hujus*
Cap. Triangulo dubio circulum circumscripseris, videbis basin
anguli dubij aut per Circuli centrum transire, aut centrum
intra Triangulum esse, aut extra idem. Sin illud, erit angulus
Dubius Rectus, quia est in Semicirculo : sin hoc, erit angulus
Dubius Acutus, est enim in majore segmento : Si deniq; istud,
pronunciabis Angulum Dubium esse Obtusum, quia in mino-
re circuli segmento est.

Anguli deniq;, quos diximus certo respectu in circulo
esse, sunt qui non ut anguli in segmentis lineam Re-
ctam pro basi habent, sed arcui vel segmento alicui
circulari insistent, ut basi : quamvis non minus es-
sent tales, etsi illi arcui linea recta subduceretur.

Dicunturq; vel ad centrum esse, vel ad circumfere-
ntiam.

Horum unius cum mentio apud Autores incidit, non
potest non & alter in considerationem cadere : in-
telliguntur enim uterq; eidem arcui ut basi insistere.
Estq; Angulus ad centrum semper duplus anguli ad
circumferentiam : *Per 20. III. Elem:*

Sic fuit Linearum, & Lineatorum primi nempe Angu-
li etiam

li etiam, in circulum adscriptio : consequens erat ut & figurarum in eundem adscriptio videretur.

Quia verò totus IV. Liber Elementor. in eo occupatur, Autorumq; insuper aliorum etiam abunde est, qui de hac materiâ, quæ in peculiare & quidem satis ingens volumen facilimè excrefcere posset, scripserunt : subsistendum hic duxi, reliqua, quæ fortè his non minus commodè superaddi potuissent, aliò rejecturus; & nunc quidem ad alteram hujus libri sectionem perrecturus, quæ Triangulorum Sphaericorum naturam edocebit.



LIBRI I.
TRIGONOMETRIÆ

SECTIO POSTERIOR

De Triangulis Sphæricis.

CAP. XV.

DE

*Spharâ, Spharæq; Circulis in
generâ.*

Sphæra est figura solida, unicâ superficie compréhensa, cujus partes à puncto exactè medio undiquaq; æqualiter absunt.

Vel, ut Cicero lib. de *Universitate loquitur*, cujus omnis extremitas paribus à medio radijs attingitur. Finckius suæ Geometriæ lib. XII. definit Sphæram, esse rotundum solidum; ad differentiam Circuli, quàm lib. I. dixerat esse Rotundum plannum.

Illud verò punctum Sphære medium etiam hîc *Centrum ejusdem* dicitur.

Ab hoc enim itidem, uti prius in Circulo, quotquot lineæ rectæ ad superficiem ducuntur omnes sunt æquales: dicuntur etiam Radij vel Semidiametri, suorum nempe Circulorum, quorum Radij nimirum sunt.

Estq; non tantum Sphære, sed & Axis Sphære ipsius medium.

Axis verò Sphære est recta linea à puncto certo superficie Sphære ad oppositum per centrum ducta, circa quam

ca quam immotam Sphæra tota circumvolvitur.

Axis Sphære correspondet Diametro Circuli : quin imò Axis nihil aliud est quam Diameter certi cujusdam in Sphæra circuli. Siquidem quemadmodum è centro Sphære innumeris Radij educi, ita & per idem innumeræ Diametri trajici possunt. Ea tamen Diameter saltem axis nomine censetur, circa quam (modo Sphære prius motus assignetur) Sphæra, uti dictum est, circumvolvitur. Atq; ex hac ipsâ Diametro, vel potius Semicirculo circa eam Diametrum circumvoluto Sphæra quodammodo oritur.

Extrema porro Axis puncta, *Ejusdem Poli* vocantur.

Peculiare hoc est Circulis Sphære eorumq; inprimis Diametris, ut non tantum media earum puncta, sed & extrema attendantur. In Circulorum Planorum enim Diametris saltem centra pensitabantur : in Sphære verò circulis & centra Diametrorum, & earum extrema seu Poli vel vertices.

Ceterum Circulorum, qui in Sphære superficie describi possunt 1. alij sunt maximi, alij minores. 2. alij sunt invicem Paralleli, alij sese interfecant.

Sæpè multumq; mecum cogitavi, qua ratione studia eorum juvare queam, qui Sphæricorum etiam Trigonometriam addiscere velint. Non enim tam commodè circuli Sphærici, eorumq; sectiones & quæ inde enascuntur Triangula in cartâ plana delineari possunt, atq; circuli Plani & Triangula Rectilinea : imò difficilius, utut satis graphicè descripta, intelliguntur à Tironibus, quàm superiora. Tandem id consilij mihi alubescere præ alijs cœpit, quod video etiam Finckium suis Lectoribus dedisse in lib. XII. Geom. quando ait : *Hoc tamen admonitum Lectorem Philomathen volo : ut sibi Sphæram comparet, distinctam circulis : qualis esse potest, quæ vulgo ab Astronomis decem Circulis com-*

lis componitur. In eâ enim sequentia melius videri possunt, quàm in cartâ aut superficie depingi. Quibus verbis Finckius Sphæram Armillarem intelligit, quâ nemo studiosorum carere potest, multò minus ij, quorum mentem Deus è meliore luto finxit, adq; hæc sublimia accinxit. Quod si quis Armillari destituatur, utatur globis, qui in crebriori usu sunt, facileq; ubivis è proximo peti possunt. Quam ob causam & ego, præsertim cum & ruditas & importunitas operarum, quibus hætenus usi sumus, molesta sit, in posterum à Schematibus abstinere, omniaq; ad ipsum Globum referam, ut vel Me præmonstrante ejus usus tantò fiat promptior.

Circuli ergò Maximi sunt qui Sphæram exactè bisecant.

Tales sunt in Globo *Æquinoctialis, Ecliptica, Coluri, Circuli Declinationum, & latitudinum, Horizon & Meridianus.*

His idem cum Sphæra centrum est.

Siquidem enim Sphæram bisecant, bisecabunt eam in centro, ideoq; & centrum Sphære in Circuli plano erit.

Maximorum Circulorum quivis distat ab alterutro suorum Polorum Quadrante Circuli Maximi.

Quos prius Polos diximus, ij revera Sphære, cui jam motus assignatus est, proprii sunt & peculiare, eorumq; respectu apud Astrónomos quidam Circuli dicuntur per eos Polos transire ut sunt Coluri & reliqui Circuli Declinationum, alij verò non, uti ceteri omnes. Cujusvis autem Circuli Poli proprii non sunt propriè extrema puncta Diametri suæ: sed potius extrema puncta Diametri alterius alicujus Circuli, qui Circulus necessario ita priori adaptatus est ut ejus Diameter ad angulos Rectos erecta sit ad Planum Circuli prioris, illudq; perpendiculariter transeat. Exemplum in Globo est evidentissimum in *Æquatore*, cujus Polus non est aliquod in ipso *Æquatore* punctum,

ctum, sed punctum Globi utrimq; ab *Æquatore* remotissimum: Vel, quod idem est, Poli *Æquatoris* sunt duo puncta Coluri alterutrius, e. g. *Æquinoctiorum*, qui Colurus ita ad *Æquatorem* erectus est ut illa duo puncta ad nullam *Æquatoris* partem annuant aut abnuant, sed ab omnibus *Æquatoris* partibus æqualiter absint. Quantum autem Poli *Æquatoris* ab *Æquatore* aut Poli cujusvis Circuli maximi à suo Circulo distent, id etiam ex eodem hoc exemplo est manifestum. Colurus enim jam dictus ab *Æquatore*, ejusq; Polis ita dividitur, ut inter Polum alterutrum & *Æquatorem* semper *Quadrans* Coluri interjiciatur. Itavicissim Poli ejus Coluri non sunt in Coluro sed in *æquatore*, nonagesimus nimirum & 270. ejus Gradus: dividiturq;, itidem ut prius Colurus, *Æquinoctialis* etiam per Colurum, Colurq; Polos in quatuor Quadrantes, &c.

Circuli Sphæræ minores sunt, qui nec Sphæram in duas partes dividunt, nec idem cum Sphæra centrum habent.

Tales sunt Tropici & Polares, ad Trigonometriam nihil conferentes.

Circuli Sphæræ Paralleli sunt qui eosdem Polos habent.

Nec Circulorum Parallelismus ad istud nostrum propositum conducit: quamvis ad Astromiam ejus usus sit necessarius. In globo autem ejusmodi Circuli sunt Tropici & Polares qui ad *Æquatorem* omnes sunt Paralleli, eosdemq; insuper cum eo Polos habent.

Qui se deniq; mutuò interfecant Circuli (& quidem Maximi; Minores enim nunc non moramur), interfecant se aut ad Angulos Rectos, aut ad Obliquos.

O ;

Circu-

Circulorum, qui se mutuò rectè secant, unus transit per alterius Polos : & contra :

Circuli, quorum unus per alterius Polos transit, secant se mutuò ad angulos Rectos.

Circuli maximi rectè & per Polos se secantes, bisecant se mutuò : Et contra :

Circuli maximi sese mutuò bisecantes, secant se quoq; mutuo ad angulos rectos, & per Polos : *Per 11. 12. 13. 14. I. Sphæricorum Theodosij.*

Ita in Globo iteram *Æquinoctialis* & *Colurus Æquinoctiorum*, de quibus etiam prius egimus, Circuli uterq; Maximi 1. ad angulos rectos se secant mutuò : quia poli unius à suo circulo distant per superiora quadrantibus alterius circuli, quod in Sphæricis omnem annutum & abnutum lateralem tollit æquè certè, atq; in Planis perpendicularum : 2. unus etiam per alterius polos transit : siquidem poli *Æquatoris* omninò in Coluro ipso, Coluri poli in ipso *Æquinoctiali* sunt : 3. bisecant se mutuò : quia enim unus per alterius polos transit, poli autem nulli sui circuli parti annuunt aut abnuunt, utiq; nec circulus per Polos illos decurrens id committet. Quod de his duobus circulis dictum est, id & de *Æquatore* & Coluro *Solstitiorum*, de *Eclipticâ* & Coluro *Solstitiorum*, de Coluro utroq; , de *Æquatore* & *Meridiano*, de *Meridiano* & *Horizonte*, de quovis circulo *Declinationum* & *Æquatore*, deq; quovis circulo *latitudinum* & *Ecliptica* verum est.

Circuli Maximi, qui ad Angulos Obliquos sese mutuò interfecant, non quidem per Polos, bivariam tamen sese interfecant.

Quia scilicet Maximi, quo nomine idem uterq; cum Sphæ-
râ cen-

ra centrum habet, eandemq; bifecat, uti & per consequens unus alterum. Id videre est in *Æquatore & Eclipticâ, Eclipticâ & Coluro æquinoctiorum, Æquatore & Horizonte obliquo, Meridiano & Ecliptica* plerumq;, &c.

Quod si tamen duos Circulos Maximos Obliquos tertius Maximus per Polos secet, erunt sectorum segmenta utrimq; à secante æqualia.

Quia nempe *per priora* bifecantur, & quidem per Polos. Ita per Colurum Solstitiorum secantur *Æquinoctialis & Ecliptica* : & per Meridianum *Æquinoctialis idem & Horizon Obliquus* : &c.

CAPUT XVI.

De

TRIANGULIS SPHÆRICIS, EORUMQUE
speciebus in genere.

Triangulum Sphæricum est, quod in Sphærâ seu Globo describitur.

Laterâ ejus sunt arcus trium Circulorum maximorum Sphæræ sese mutuò interfecantium.

Tale Triangulum describunt in cœlesti Globo trium stellarum, vel trium aliorum punctorum quorumcunq; ; in Terrestri trium locorum distantia : siquidem eorum semper puncta vel loca binâ per arcum certum connectuntur, quem arcum si cōtinues, videbis eum tandem circulum maximum constituturæ. Non minus enim in Sphæricis per duo quælibet puncta potest circulus maximus duci, quàm in Planis per duo puncta aliqua linea Recta.

Angulorum Sphæricorum autem mensuræ sunt arcus
Circu-

Circulorum Maximorum ex ipsis angulis tanquam ex polis descripti, angulosq; subtendentes.

Exemplorum copiosissima seges sese offeret in sequentibus.

Triangulum Sphæricum aut est Quadrantale, aut non, Quadrantale est, cujus aut latus, aut angulus æquatur Quadranti vel 90. gradibus.

Estq; vel multiplex vel simplex.

Quadrantale Multiplex est vel Trirectangulum vel Birectangulum.

Trirectangulum est, cujus omnes partes æquantur Quadranti vel 90. Gradibus.

Ejusmodi Triangula describuntur in Globo à tribus circulis Maximis per polos sese mutuò secantibus. Ita duo Coluri & Æquinoctialis, Circuli Sphære Maximi, per Polos sese mutuò interfecant: Illi enim ambo per hujus polos transeunt; utri & Colurorum unus per alterius polos. Describuntur ergo ab ijs solà hac mutua intersectione omnia Triangula quæ fiunt Trirectangula, siquidem dicti Circuli ubiq; ad angulos rectos se interfecant.

Birectangulum est, cujus duo tantum anguli & sua subtendentia latera sigillatim Quadranti æquantur.

Hujus angulus reliquus aut est acutus, aut obtusus.

Si acutus, est & tertium latus Quadrante minus: sin Obtusus, erit majus.

Quin imò, siue acutus sit, siue Obtusus tertius angulus Trianguli Birectanguli, æquatur suo lateri subtendenti.

Ita in Globo Quadrantes Ecclipticæ & Æquatoris Verni

cum.

cum arcu Coluri Solstitiorum ipsis interjecto concludunt Triangulum Birectangulum cum tertio angulo acuto ad intersectionem nimirum Eclipticæ & Equatoris : ejus autem anguli aculi mensura est idem ille arcus Coluri, sive idem illud latum eundem angulum subtendens, quia scilicet latum illud ex eo angulo tanquam ex polo descriptum est. Idem judicium esto de Birectangulo cum angulo reliquo Obtuso, quod Quadrans Eclipticæ vern⁹, Quadrans Equatoris hybernus, arcusq; Coluri Solstitiorum per Polum Equatoris Septentrionalem decurrens, angulumq; illum Obtusissimum à dictis Quadrantibus comprehensum subtendit.

Quadrantale Triangulum Sphæricum simplex est, cujus unica tantum pars, sive latus sive angulus, æquatur Quadranti vel 90. gradibus : cæteræ autem quinque partes non sunt Quadrantes.

Triangulum quod Quadrantale est respectu Anguli Recti, ejus reliqui duo vel sunt ambo acuti, vel ambo obtusi; vel alter obtusus, alter acutus.

In illo, latera singula sunt Quadrantibus minora.

In hoc, latera duo sunt Quadrantibus majora : tertium minus.

In isto, latera duo sunt Quadrantibus minora : tertium majus.

Triangulum Sphæricum non Quadrantale est cujus nec ullum latus est circuli Quadrans, nec ullus angulus Rectus.

Constatq; aut ex puris angulis acutis, aut ex puris obtusis, aut ex his utrisq; mixtis

P

Singu-

Singulas Triangulorum enumeratorum species recensere aut in globo ostendere, ut in initio, nimis longum foret, & in seqq. tractatione nos moraretur. Credo per superiora Lectori meo viam esse apertam, eadem proprio Marte indagandi. Unum hoc loco restat, quod præteriri nequit, de complementis nimirum cum laterum Triangularium, tum ipsorummet etiam Triangulorum.

Porro in Triangulis Planis nomen Complementi extendebatur tantum ad solos angulos, quia nempe in Triangulo Rectangulo acutorum unus reliqui ad Rectum complementum erat, aut in Obliquangulo tertius reliquorum.

At in Sphæricis nō tantum Complementa angulorum (quamvis alio respectu sic dicta) sed & laterum, quin imo ipsorummet etiam Triangulorum in considerationem veniunt.

Atq; partium quidem Triangularium complementa quomodo accipiantur & in quos usus, id commodissimè expeditur Libro tertio, cujus nimirum hæc contemplatio est propria.

Quæ verò ipsorum Triangulorum complementa dico, id alij vocant Triangula opposita.

Intelligunturq; fieri cum duo cujusvis Trianguli latera continuantur ex eâ parte, quâ mutuò sibi abnuunt, usq; ad mutuum concursum vel donec semicirculos constituent.

In utroq; autem Triangulo tam dato quam ejusdem comple-

complemento duæ partes ad minimum unius semper æquantur duabus partibus alterius, communis nimirum utriusq; Trianguli Basis & anguli eidem Basi oppositi.

Dati verò & complentis vel oppositi Triangulorum affectiones aut sunt planè eadem, aut saltem inter se convertuntur, nonnunquam etiam variant.

Hinc Trirectanguli complementum est & ipsum Trirectangulum.

Birectanguli cum Angulo Acuto complementum est Birectangulum quidem aliud; sed cum angulo Obtuso: quemadmodum & contra hujus complementum illud est: si nimirum utrobique alter quadrans cum latere minore continuetur. Si vero ipsi saltem quadrantes utrobique continuentur, erunt complementa datis similia.

Rectanguli cum duobus Acutis complementum est Rectangulum aliud sed cum duobus Obtusis: hujusq; vicissim illud: si nimirum latus inter angulos acutos interjectum pro communi basi statuatur. At si latus inter Rectum & Acutum communem basin facias, erit complementum Triangulum Rectangulum, sed cum Acuto & Obtuso.

Rectanguli cum Acuto & Obtuso, si latera angulum Rectum comprehendentia continues, complementum est Rectangulum itidem cum acuto & obtuso:

si verò latera Anguli Acuti producas, erit complementum Rectangulum cum duobus Acutis : si deniq; latera Obtusi Anguli prolonges, erit complementum Rectangulum cum duobus Obtusis.

Trianguli Sphærici purè Acutanguli complementum est Triangulum cum duobus obtusis & uno acuto.

Trianguli Sphærici purè Obtusanguli complementum est Triangulum cum duobus acutis & uno obtuso.

Trianguli Sphærici cum duobus Obtusis & uno acuto, si latera Anguli Acuti continues, erit complementum purè Acutangulum : si verò alterius Obtusi continues, erit complementum dato simile.

Trianguli Sphærici cum duobus Acutis & uno Obtuso, continuatis cruribus Anguli Obtusi, erit complementum merè Obtusangulum : si verò alterius Acuti latera continues, erit complementum dato iterum simile.

Non injucundum fuerit studiosis harum rerum proprio, quod ajunt, Marte in istas varietates Triangulorum Sphæricorum, inq; eorum complementa inquirere. Nec Schematibus omnia satis cōmodè efficiuntur : ipsaq; adeò congeries eorundem plusquam molesta, quam hactenus instituimus, recensitionem tacitè quasi mandavit. Ut autem tantò melius à quovis omnia percipi & intelligi queant, sciendum est, quia latus Trianguli cujuscunq; dati est arcus circuli Sphære maximi, si quævis duo Trianguli latera contigua versus easdem partes usq; ad concursum alium priorum illorum arcuum, qui jam integri sunt

sunt semicirculi, continuaveris, in singulis priorum exemplorum reliqua promptissime sese exhibitura; idq; tantò adhuc expeditius, ubi reliqua, quæ de Triangulorum Sphæricorum cum Rectilineis communibus, proprijsq; affectionibus restant, prioribus accefferint.

CAPUT XVII.

De

AFFECTIONIBUS TRIANGULORUM
Sphæricorum.

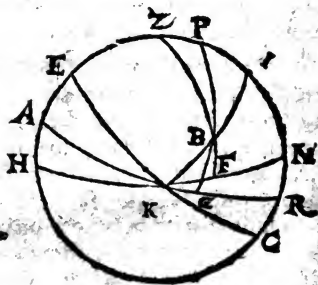
Restat, ut videamus, quid Triangula Sphærica cum Planis, de quibus supra egimus, commune; quid peculiare & proprium habeant.

Fateor primum partem eorum, quæ dicenda restant, debuisse superius propositam esse, loco quàm hic commodiore: nec contradicturus sum ei, qui reliqua etiam ante recensio-
nem specierum Triangulorum Sphæricorum posita velit. Verum, & mihi mea causæ sunt, ob quas utrumq; huc usq; distuli, ne me quis *amphidias* accuset. Quod enim utriq; Triangulo communia, non in genere primis capitibus tractarim, feci ob Ingeniorum summam discrepantiam, quorum pleræq; à Sphæricis Triangulis æquè atq; ab ipsâ Astronomiâ abhorre-
re solent: quam ob causam facile fieri potuisset, ut unus & alter, ob crebram Triangulorum Sphæricorum mentionem, cum Sphæricis Planorum vel Rectilineorum etiam doctrinam abjecisset. Quare, quemadmodum ipsa Trigonometria Sphæricorum (præsertim si Logarithmi adhibeantur) diversissimum quid est à Trigonometriâ Planorum, non puto me adeo enormiter per-
casse, quod utriusvis etiam principia segregatim proposue-
rim.

Utergo in lineis Rectis : ita & in arcibus Circulorum
Sphæræ Maximorum

- I. Ad punctum mutui concursus duo ; ad punctum
mutuæ intersectionis quatuor Anguli fiunt ; ijq; vel
Recti, si unus Arcus ex alterius polo ducatur ; vel in
priori casu duobus Rectis, in posteriori quatuor Re-
ctis æquales, si non per Polos datorum arcuum cir-
culi ducantur.

Hinc factum, ut quidam Autores arcum, qui ex Polo reli-
qui arcus ducitur ad angulos Rectos, ex analogiâ cum Rectili-
neis, dixerint Arcum vel Qua-
drantem perpendicularem.
Tales sunt in appposito Sche-
mate ZF, PG, IK, quorum il-
le ex Z Polo circuli HN, hic
ex P Polo Circuli AR, iste ve-
ro ex I Polo Circuli EC du-
ctus est : quo nomine quili-
bet etiam eorum arcum,
cum Circulo ex cujus Polo
descendit in puncto inciden-
tiæ utrimq; duos angulos Re-
ctos facit. At arcus PG, in puncto, quo Circulum HN transi-
t non jam duos Rectos facit, quia P non est Polus HN Circuli, at-
tamen duos simul sumtos duobus Rectis æquales : quod idem
etiam accidit, in arcibus ZB & KI, item PB & KI eodem modo
se interfecantibus.



- II. Trianguli duo quælibet latèra sunt majora reliquo.
Est 37. III. Regiom.

III. Ma-

III. Majus latus majorem angulum subtendit : *Per 42.*

III. Reg. Et contra :

IV. Major angulus Majori lateri opponitur : *Per 43. III.*

R. Hinc & :

V. Minus latus minorem angulum subtendit : & contra :

VI. Latera æqualia subtenduntur æqualibus angulis : & contra :

VII. Triangulum Æquicrurum, in Basi est æquiangulum : & contra, *Per 40. 41. III. R.*

VIII. Triangula Sphærica æquilatera sunt æquiangula. *Per 36. III. R.*

IX. Triangula quæ æquantur angulo æquicruro, æquilatera sunt & æquiangula : *Per 36. III. R.*

X. Triangula, quæ variant angulo æquicruro, variant & basi; eruntq; inæquilatera & inæquiangula : *Per 50. III. R.*

XI. Triangula æquicrura, quæ variant basi, variabunt & angulo æquicruro : *p. 51. III. R.*

XII. Si duo unius Trianguli Sphærici anguli duobus angulis alterius Trianguli sint æquales; unumq; latus (quod aut inter æquales utrobyq; angulos interjicitur, aut uni æqualium angulorum subtenditur) uni laterum æquale : æquilatera & æquiangula iterum erunt Triangula : *Per 52. & 53. III. R.*

XIII. Si duo Triangula æquantur duorum angulo-
rum 3-

rum æqualium, quique ejusdemq; speciei sint, basi-
bus : erunt æquilatera & æquiangula : *Per 55. III. R.*

Ex doctrinâ Triangulorum Planorum tam facilis est eo-
rum, quæ jam dicta sunt, cognitio, ut non videam cur Demon-
strationibus anxie conquisitis, in re satis manifestâ, & Mihi &
Lectori Meo molestus sim. Quin imò, cum superius omnia in
Rectilineis demonstrata, ideoq; nota sint, nihil impedit, quò
minus hæc quasi principiorum loco habeantur. Pergamus it-
taq; ad ea quæ restant.

Sic fuerunt Affectiones Triangulorum Sphæricorum
communes Triangulis etiam Rectilineis : restant
ex, quæ hujus loci propria & peculiaris sunt, deq;
quibus Rectilinea nihil plane participant.

I. Trianguli Sphærici tria latera simul sumta sunt mi-
nora duobus semicirculis. *Per 39. III. R.*

Facilis est hujusce Problematis Demonstratio : modo da-
ti Trianguli duo latera quæcunq; usq; ad concursum semicir-
cularem continuentur & compleantur, ita enim facile appare-
bit tertium latus continuationibus illis multo esse minus.

II. Omnis Trianguli Sphærici tres anguli simul sumti
sunt duobus Rectis majores. *Per 49. III. R.*

Contra quàm in Planis fiebat, ubi semper tres Trianguli
cujuscunq; Anguli duobus rectis æquabantur : quo nomine
facilimè non tantum in Rectangulo, sed & in Obliquangulis ex
dati duobus Trianguli Angulis tertius habebatur. In Sphæri-
cis nullum ejusmodi est subsidium, sed quivis Angulus est cal-
culo subjiciendus, nisi constet eum rectum esse.

III. Triangula Sphærica æquiangula sunt æquilatera.
Per 54. III. R.

In Re-

In Rectilineis ex æqualitate angulorum in Triangulis similibus non nisi laterum proportionalitas inferitur : at in Sphæricis ipsa etiam æqualitas. Hinc *Libr. III. inferius* ex datis tribus angulis Trianguli Rectilinei non pervenimus in cognitionem laterum : quod tamen in Sphæricis postmodum poterimus.

IV. In Triangulo Sphærico Rectangulo, si crus anguli Recti alterum sit Quadrans, erit & angulus eidem cruri oppositus Rectus ; & contra : si verò crus illud fuerit Quadrante majus, erit & angulus obtusus ; & contra ; si deniq; minus fuerit, erit & angulus acutus ; & contra. *Per 3. IV. R.*

V. In Triangulo Sphærico Rectangulo, si crus Anguli Recti alterum sit Quadrans, erit & Basis Quadrans ; & contra : si verò crura ambo fuerint Quadrante majora aut minora , erit Basis Quadrante minor ; & contra : si deniq; crus alterum Quadrante majus, alterum minus fuerit, erit Basis Quadrante major ; & contra. *Per 4. 5. IV. R.*

VI. In Triangulo Sphærico Rectangulo, si angulorum supra Basin alter fuerit Rectus, erit Basis Quadrans ; & contra : si uterq; vel Obtusus vel Acutus, erit Basis Quadrante minor ; & contra : si deniq; alter Obtusus alter Acutus, erit Basis Quadrante major ; & contra. *Per 6. 7. IV. R.*

VII. In duobus Triangulis Sphæricis Rectangulis, si crura anguli Recti unius æquentur cruribus anguli Recti alterius, sintq; Quadrantibus minora : erunt ipsa Triangula æquiangula & æquilatera. *Per 56. III. R.*

Q

VIII. In

VIII. In Triangulo Sphærico Rectangulo, cujus nullus arcuum sit Quadrans: angulus lateri, quod quadrante minus est, oppositus Acutus est, & ipso latere major; oppositus verò lateri, quod majus est Quadrante, Obtusus est, & ipso latere minor.

Hoc & sequentia V. Theoremata plurimum lucis adferunt ad doctrinam Sphæricam: siquidem ex ijs manifestum fit, quæ inter angulos & latera Triangulorum Sphæricorum Proportio sit, quæve quantitas, ut ex illis Triangulum constitui possit. Cum igitur viderem non minus necessariam esse eorum cognitionem, quam priorum, quæ ex Regiomontano in præcedentem Catalogum collegi, non puto me operæ precium non facturum, si & ista adjecero. Mutuatus autem ea sum ex Clavij *Lib. III. Astrolabij edit. Mogunt. in fol. p. 341. & seqq.* Meum porro toto hoc Capite propositum est omnia, quæ ad Sphæricorum Triangulorum accuratiorem doctrinam facere videntur, tanquam sub unum intuitum sistere, ne quid incipientibus inditum sit. Rudioribus ergo velim hæc instar principiorum esse; quo nomine etiam nolui Demonstrationibus prolixior esse. Ingeniosiores, quiq; absq; hoc scyrpo natare queunt, rogatos velim, ne sinistrè interpretentur me Demonstrationes omisisse. Ideo enim ubivis Lectorem Meum ad Regiomontanum prius, nunc ad Clavium remitto, ut si certitudini propositionum minus fidat, pondera Demonstrationum apud ipsos Autores pensitet.

IX. In omni Triangulo Sphærico Rectangulo omnes tres anguli quatuor Rectis sunt minores: hoc est, duo Anguli non Recti minores sunt tribus Rectis, seu 270. gradibus.

X. In Triangulo Sphærico Rectangulo Equicruro, si
duo an-

duo anguli æquales sint acuti, erit uterq; semirecto vel 45. gradib. major : si verò Obtusi, recto cum semisse vel 135. gradib. minor.

Quia enim in Triangulo Sphærico Rectangulo omnes tres anguli simul sumti minores sunt quatuor Rectis, majores autem duobus, *per antecedentia* : necesse est in Rectangulo Æquicruro reliquorum præter Rectum alterum 1. aut majorem esse 45. gradib. alias enim aut æquarentur tres anguli duobus Rectis, aut nondum ad duos Rectos accederent : 2. aut minorem 135. gradibus : si enim æquentur 135. gradib. æquentur & tres anguli quatuor Rectis ; si superarent, excederent : quod utrumq; viciosum.

XI. In omni Triangulo Sphærico Rectangulo, uterlibet Obliquorum major est complemento alterius : minor autem differentiâ ejusdem complementi à Semicirculo.

XII. In quovis Triangulo Sphærico duo anguli quomodocunq; sumti simul majores sunt differentiâ inter reliquum ac Semicirculum : minores autem differentiâ inter angulum vel arcum, quo reliquus à semicirculo differt, & integrum Circulum.

Ex primâ parte hujus Theorematis instar consecrarij sequitur etiam.

In omni Triangulo Sphærico, producto uno latere externum angulum majorem esse duobus internis, & oppositis simul sumtis.

XIII. In quolibet Triangulo Sphærico differentia inter summam duorum angulorum utcunq; sumtorum, & integrum Circulum, major est, quam differentia

rentia inter reliquum angulum, ac Semicirculum.

XIV. In Triangulis Obliquangulis, si anguli supra basin fuerint ejusdem speciei, hoc est, uterq; aut Acuti aut Obtusi, cadit perpendicularum à vertice intra Triangulum : extra verò, si diversæ. *Per 8. IV. R.*

XV. Trianguli Acutanguli laterum quodvis Quadrante minus est. *Per 9. IV. R.*

XVI. Si Trianguli duo anguli acuti æquales sint : erunt & latera ijs opposita Quadrantibus minora. *Per 10. IV. R.*

XVII. Si Trianguli duo anguli acuti inæquales sint : erit & latus minori eorum oppositum Quadrante minus. *Per 12. IV. R.*

XVIII. Si Triangulum duos acutos angulos habuerit, latusq; uni eorum oppositum non fuerit minus Quadrante : erit reliquus ejus angulus Obtusus, latusq; ei oppositum majus Quadrante. *Per 14. IV. R.*

XIX. Si Trianguli duo anguli Obtusi æquales fuerint : erunt & latera ijs opposita quadrantibus majora. *Per 11. IV. R.*

XX. Si Triangulum duos angulos acutos inæquales habuerit : erit & latus majori eorum oppositum Quadrante majus. *Per 13. IV. R.*

Atq; hæc sunt Theoremata illa aurea, quæ à doctrina Triangulorum Sphæricorum abesse non duxi conveniens. Quæ si nullum alium usum haberent, sufficeret saltem is, ut data Triangula examinare queamus ad hæc Theoremata, sintne talia
eorum

eorum data, ut Globo commodè adaptari queant. Quæ determinationes magnitudinis angulorum in Planis promptiores quidem erant, & ab alijs ante me etiam usitata: at in Sphæricis Triangulis nescio an ante Clavius, ex quo hæc in commune rei literariæ bonum huc traduxi, quisquam hætenus animadvertit, ne dicam indicarit. Si videro ista placuisse eruditibus, aut utilia etiam fuisse studiosis harum rerum, Deusq; insuper vitam, & vires ulterius prorogaverit, non desistam à cultu eorundem, quin potius, quod Urfinis sætibus familiare est, ut ad majorem omnia perfectionem adducantur, ope omni admitar. Interim esto heic

LIBRI PRIMI
FINIS.



Q :

BENJAMIN

BENJAMINIS URSINI

SPROTTAVI SILESII,

Mathematici Electoralis Brandenburgici,

TRIGONOMETRIÆ;

LIBER II.

De Constructione Canonis Triangulorum; ejusq; usu in genere.

SECTIO I.

De Constructione Canonis
Sinuum.

CAPUT I.

De

CANONE TRIANGULORUM
veteri.

Superiore libro vidimus Triangula, eorumq; affectiones & Symptomata: restat eorundem Dimensio vel Solutio.

Ubi iterum videnda; & Medium seu Instrumentum Solutionis, & Solutio vel Calculus ipse.

Illud erit Materia hujus; hoc Tertij Libri.

Dimensio Triangulorum commodissimè, & unicè quasi, sit beneficio Canonis Triangulorum.

Canon Triangulum est Tabula, continens definitionem Quantitatis, quam habent lineæ Rectæ ad Circulum applicatæ.

Cum enim ex partibus Triangularibus quædam sint Rectæ
ut la-

ut latera in Triangulis Planis, quædam aut ipsæ sint Circulares, ut latera Triangulorum Sphæricorum, aut certè à segmentis Circularibus mensurentur, quales sunt anguli utriusq; Trianguli: coacti sunt Artifices circumspicere, quo pacto aliqua saltem ratione rectum cum curvo comparent; ut inde tanquam ex promptuario quodam omnes omnium Triangulorum depromi possint mensurationes.

Canon Triangulorum alius est Veterum, alius Nostri seculi.

Canon Veterum ab Hipparchi temporibus ad nostra tempora usq; annis quasi 1750. & constructionis & usus tractationisq; ratione singulis seculis variavit.

Recensuit eas Canonis variationes ante 30. annos in præfatione ad Lectorem L. Valentinus Otto Operis Palatini Autor verbis, quæ iterum in Lectorum gratiam huc conjiciam, sequentibus: *Et si diu multumq; in excogandâ & illustrandâ hac doctrinâ desudarint Mathematici, tamen quod alijs artibus accidit, ut nulla simul inventa & absoluta sit: idem etiam huic generi doctrinæ evenit, ut priorum inventis semper aliquid addiderint posteriores. De Triangulis etsi quidem multa in Euclidis Elementis essent, nihil tamen habent, quod hic requiritur, quomodo ex lateribus anguli, & vicissim ex angulis latera cognosci possint. Hipparchus, Theone teste, subtensarum in Circulo Rectarum Doctrinam 12 libris tractavit. Huic Menelaus Romanus, qui & Mikus nonnullis dicitur, successit. Ex hoc in opus suum magnum quibusdam assensu miro artificia mirâq; brevitate tantum hujus doctrinæ in primo libro sui operis complexus est Ptolemæus, quantum sibi satis fore vidit insequentibus libris, positaq; ea quæ ex centro partium 60. Canonem Rectarum in Circulo ad partium Semisses condidit. Quem Copernicus nostri seculi miraculum imitatus est; ut enim ex Menelao ad institutum suum concinnavit necessaria Ptolemæus, ita simili prorsus & artificio & brevitate Copernicus ex Ptolemæo*

lemæo & Johanne Regiomontano collegit, quæ ad intelligendum opus suum necessaria existimavit. Saraceni, qui post summos illos Doctrinæ Motuum parentes, omne studium omnemq. operam buc contulerunt, animadverso, quod facilius per minores numeros procederet ratiocinatio, quodq. eadem maneret in semisibus subtensarum ratio, quæ in totis, relicta Ptolemaicâ loquendi formâ, nova vocabula, novæq. appellationes usu id exigente, in sua lingua excogitarunt. Hos secutus Johannes de Regiomonte cum videret facilitatem & commoditatem, quam in Logistices usu præstant Indici numerorum Characteres, relictis scrupulis primis & secundis, quibus hætenus cum Ptolemæus, tum etiam Saraceni fuerant usi, primò eam quæ ex centro posuit partium 6000000. ut Sexagenarij quidem veterum divisionem retineret, & scrupulorum involutiones vitaret. Mox autem animadvertens & unitatem majus præstare compendium, quam Sexagenarium, maluit venerandam Antiquitatem hoc in parte relinquere, quam per devia & ambages querere, quæ rectâ viâ facilius posset assequi. Sed quid non eruit indefessum studium & improbus labor? Vidisti idem maximum fore compendium, si ratio HC semisibus ad AH (in apposito Schemate) haberetur non tantum in partibus quatum AC ex centro ducta poneretur partium 10000000, sed etiam in partibus quarum sive HC sive AH poneretur partium 10000000. & pro ea ratione altera semisium constitueretur. Quare hac ratione usus, Tabulam quam Facundam appellavit, confecit. Sed neg. sic tractatio Doctrinæ Triangulorum absoluta fuit. Nam quia ad Triquetri latera, & non subtensas respicitur, requirebatur, ut data recta HC vel AH in proportionem, quarum altera eorum ponebatur partium 10000000. ejusdem partibus & subtendens angulum Rectum, hoc est, Hypotenusa daretur. Idcum Georgius Joachimus Rheticus animadvertisset, rationem inire cœpit, quomodo hanc Doctrinam locupletare & pleniorē efficere posset. Hæc est historia Canonis Triangulorum usque ad Rheticum



ticum, uti L. Valent. Otto eam recenset : qui duo Viri quid præstiterint, alijs judicandum relinquo. Plurimi sanè & pro eo tempore satis ingeniosi laboris est id opus : nec minorum sumtuum credo fuerit, si rationum Magistros, per quorum manum Beneficentissimus Princeps eas contulit, audire liceret. Verùm & Rhetico & Ottoni sua cuiq; laus debetur & meritò tribuitur : utut interim Mathematici partim *συνγενοί*, partim succedentes, totum opus & commodius disposuerint & usibus quotidianis aptius reddiderint. Memoria enim me jam hic deserit, ut fateri cogar, me nescire, quis Auctorum primus Canonem Triangulorum tripartitus fuerit in Sinuum, Tangentium, & Secantium Tabulas. Nec puto majorem Lectorem mihi vitio versurum, me à libris minus instructum esse, quam hætenus Copernico quis imputavit, *quod ex libris, quos per paucos habuit, ut ex Rhetico Otto accepit, subsidium suo operi necessarium, petere non potuerit.* Copernicus sanè vixit in seculo, si non aureo, certè argenteo, Canonicus Fravenburgensis, sine curis domesticis; in Borussia, eà scilicet regione, quam ipse Rheticus in Encomio ejusdem non satis deprædicare potest. Nos in cupreo seculo, inter tot stelliones Monetarios, vix id tueri possumus, quod habemus : ne solliciti simus de novorum acquisitione. Sed ad rem : qui aut vivo adhuc Rhetico aut post ejus mortem, ante ipsam Operis Palatini promulgationem è Sinibus, Tangentibus & Secantibus Canonem Triangulorum construxerunt, ultimi sunt, ex ijs, quibus veterem Canonem accensemus : eorumq; sane pleriq;, inprimis verò *Wittichius, Fisticus, Finckius, Romanus, Maginus, Clavius, Landsbergius, Vieta, Byrgius*, rei Trigonometricæ tantum adjecerunt, ut in eo genere plus non potuisset addi.

Prima verò pars Canonis Veteris, Tabula nempe Sinuum communis est Canonis etiam novo, unde ejus considerationem in sequentia rejicimus : reliquæ

R

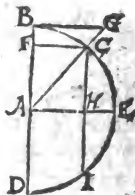
duæ

duæ de Tangentibus & Secantibus sunt illius Canonis propria.

Tangentes autem sunt Rectæ Circulo adscriptæ Sinui suo parallelæ, altero termino tangentes extremum arcus anguli oppositi, & interceptæ à reliquo ejusdem anguli crure ulterius producto. Viæta vocat *Profinus*; alij *Adscriptas*.

Sic in Schemate appposito linea B G dicitur *Tangens* Anguli B A C vel Arcus B C.

Secantes sunt Rectæ Circulo adscriptæ, per alterum arcus terminum extra circumferentiam ad concursum usq; cum Tangente excurrentes. Viæta *Transsinuosa* dicuntur.



Ita A G est *Secans* anguli B A C vel arcus B C.

Eadem porro Tangentes & Secantes sunt etiam complementorum (sive Angulorum sive arcuum) Tangentes & Secantes.

Ita prior Tangens B G est etiam Tangens Anguli obtusi CAD, qui scilicet angulus prioris B A C complementum est ad duos Rectos; uti & arcus CD, qui prioris complementum est ad Semicirculum. De Secante A G idem intelligatur.

De Constructione harum Tabellarum verò, earundemq; usu frustra hic verba sunt, siquidem ex ex Nostro Canone exulant: aliquam autem earundem mentio-

mentionem per occasionem interjiciemus etiam, ubi opus fuerit, in sequentibus.

CAPUT II.

De

CANONE TRIANGULORUM NOVO
NEPERIANO.

CAnonem Triangulorum Nostri Seculi vel Novum aut NEPERIANUM voco eum, quem sub initium hujus seculi invenit, & ante decennium primum evulgavit Johann. Neperus Baro Scotus, Mathematicus sine pari.

Is enim, cum expertus fuerit nihil Mathematica praxi tam molestum, quodq; Logistas magis remoretur, ac retardet quam magnorum numerorum multiplicationes, partitiones, quadrataq; ac cubica extractiones, qua prater prolixitatis tedium lubricis etiam erroribus sunt obnoxia: capis animo revolvere, qua arte certa & expedita posset dicta impedimenta amoliri. Multis subinde in hunc finem perpensis, non nulla tandem invenit praeclara compendia, quorum pleraq; seorsim edidit: verum inter omnia nullum hoc utilius, quod una cum multiplicationibus, partitionibus, & radicum extractionibus arduis & prolixis, ipsos etiam numeros multiplicandos, dividendos & in radices resolvendos ab opere rejicit & eorum loco alios substituit numeros qui illorum munere fungantur, per solas additiones, subtractiones, bipartiones, tripartiones: Verba ipsius Neperi in praefatione ad Lectorem. In dedicatoriâ autem ad Carolum Walliæ Principem praeterea etiam ait: Nova hac Logarithmorum methodus omnem illam pristina Matheos in calculo difficultatem (qua aliqui generosam indolem offendere possit) penitus è medio tollit: & ad sublevandam memoria imbecillitatem ita se accommodat, ut illius adminiculo facile

sic plures quæstiones unius horæ spacio, quàm pristinâ & communiter receptâ formâ Sinuum, Tangentium & Secantium vel integro die absolvere.

Canon Neperianus duarum tantum est partium.

Quo nomine etiam ad primum statim intuitum apparet, quantum veteri Canoni Novus iste præstet.

Constat enim solummodo ex Tabulâ Sinuum, & Logarithmorum.

Quarum illa tamen insuper in Trigonometriâ Sphæricorum planè carere possumus: siquidem per solos Logarithmos ea absolvitur ut *Libr. III.* apparebit.

CAPUT III.

De

SINIBUS.

Rectæ Circulo applicatæ, quarum beneficio, *ut superius dictum est*, proportio inter curvum & Rectum æstimatur, sunt vel in Semicirculo, vel in Circuli Quadrante.

Rectæ Semicirculi dicuntur Subtensæ.

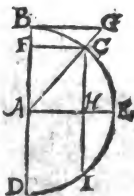
Subtensæ sunt rectæ in Circulum inscriptæ, inq; circumferentia utrimq; terminatæ, totum Circulum in duo segmenta dividentes, & utrumq; segmentum pariter dividentes. Alijs dicuntur *Chordæ*, quod scilicet Arcui suo vel circumferentiæ Circuli instar Nervi subtendantur: hinc etiam *Subtensa* & *Subtendentes* nonnullis sunt: quibusdam insuper *Inscriptæ*. Subtensarum alia est maximâ, aliæ sunt minores.

Subten-

Subtenſa Maxima eſt, quæ totum Circulum in duo ſeg-
menta æqualia dividit : adeoq; utrimq; Semicircu-
lum ſubtendit. Vulgò dicitur Diameter Circuli.

Talis est in Schemate linea B D.

Subtenſa minores ſunt, quæ totum Cir-
culum in duo ſegmenta inæqualia di-
vidunt : atq; ad eò ab una parte arcus
Semicirculo minores, ab alterâ arcus
Semicirculo majores ſubtendunt.



Ita Recta C I minor est Rectâ priori B D, & ab unâ parte subtenit arcum C E I Semicirculo minorem, ab alterâ verò parte, si Circulus continetur, arcum Semicirculo multò majorem.

Rectæ in Circuli Quadrante sunt Sinus.

Sinus est Recta linea è termino Arcus Quadrantis Circuli perpendicularis in basin ejusdem Quadrantis: reliquo verò Cruri Quadrantis parallela. Intelliguntur autem tam arcuum, quibus subtenduntur, quam angulorum; quos arcus illi metiuntur, Sinus. Sinus alius est Primarius, alij sunt Secundarij.

Sinus Primarius est Sinus Totus.

Sinus Totus est alterutrum Crurum Quadrantis. Prius dictus fuit *Radius* vel *Semidiameter Circuli*.

Tales sunt lineæ AB , AE , AD , & AC .

Sinus Secundarij sunt reliqui Sinus : ijq; vel Recti vel Versi.

Sinus Rectus, qui alijs *Sinus Primus* dicitur, est *Recta* ab uno extremo sui Arcus Perpendicularis in Diametrum Circuli ab altero extremo ejusdem arcus ductam. *Vel*: est semissis subtensæ dupli arcus.

Sic *Recta* FC est *Sinus Rectus* & Arcus BC cui subtrahitur, & Anguli BAC quem Arcus BC metitur: *Recta* CH est *Sinus Rectus* & arcus CE & Anguli CAE .

Sinus Recti omnes insistant *Basi Quadrantis Circuli* ad angulos utrimq; *Rectos*: quia eidem perpendicularares.

Ita *Sinus* FC quia ad BA perpendicularis ad F duos utrimq; angulos *Rectos* facit: ita & CH ad H .

Sinus Recti omnes sunt inter se paralleli: quia scilicet eidem *Basi* perpendicularares sunt. *Eidem autem perpendicularia, inter se sunt Parallela: & contra.*

Sinus Rectus Arcus Quadrante minoris & majoris usque ad Semicirculum est idem.

Hinc FC non tantum est *Sinus* Arcus BC & anguli BAC : sed & arcus CD ad Semicirculum reliqui & anguli *Obtusi*, quique prioris ad duos *Rectos* complementum est, CAD : siquidem ex utriusvis communi termino C ad Diametrum perpendicularis est.

Quando ergo *Sinus Rectus Complementi* datur vel petitur, intelligitur tantum *Sinus Complementi* arcus quadrante minoris.

Sic *Sinus Rectus complementi* BC , nempe arcus CE est *Recta* CH .

Idem

Idem etiam Sinus Rectus complementi est æqualis, segmento Diametri sive Radij inter Sinum rectum arcus & centri interceptus.

Ita CH & FA æquantur *per Theor. Ult. Cap. III. Lib. I.* erit ergo BC arcus Sinus Rectus quidem Recta FC , Sinus autem complementi ejusdem arcus Recta FA vel CH .

Sinus Versus qui alijs *Sinus Secundus* dicitur, est segmentum Diametri inter Sinum Rectum & arcum ejusdem interceptum. Sunt & qui Sinum Versum dicunt *Sagittam* vel *Sagittam-Sinus*, eodem scilicet respectu, quo duplum Sinus Recti vel subtensam arcus Chordam, segmentumq; circumferentiæ Circuli, cui ea subtenditur, Arcum vocant.

Estq; Sinus Versus vel minor vel major.

Sinus Versus minor, est Sinus Arcus Quadrante minoris vel Anguli Acuti.

Ita BF est Sinus Versus Arcus BC Quadrante minoris vel Anguli Acuti BAC .

Sinus Versus major, est Sinus Arcus Quadrante majoris vel Anguli Obtusi.

Ita Recta FD est Sinus Versus Arcus CD Quadrante majoris vel Anguli Obtusi CAD .

CAPUT IV.

De

INVENTIONE SINUS IN CANONE

omnium Primi.

Ad con-

AD constructionem porro ipsius Tabulæ Sinuum requiruntur Sinus Primarij in certis partibus assumptio, Secundariorumq; ex eo deductio.

Secundarij Sinus ferè Omnes, quomodocunq; etiam Totus assumatur, ad eum sunt irrationales, hoc est, tales numeri, qui neq; in numeris integris neq; in Fractionibus exactè exprimi omnes possunt.

Unde sequitur Canonem Sinuum & consequenter etiam Logarithmorum, qui ex illo derivatur, nullo quidem modo omnibus numeris exactum & perfectum dari posse: posse tamen & debere omninò utrumq; Canonem ita adornari, ut nullus in eo numerus à verò absit integrâ earum partium, quarum radius assumptus est.

Quod ut tantò commodius & accuratius fiat, assumendus est Sinus Totus major, quam deinceps in Tabulâ ponitur: ne nimirum ex resecandis à dextrâ ijs Numeris, qui ob neglectas subinde fractiones erronei sunt, aliquis in nostros numeros Canonis deinceps inferendos error subrepat.

Esto ergo Sinus Totus pro Canone nostro partium 100000000. augeaturq; idem insuper Cyphris alijs octo, ob causas jam dictas, ut ex aucto eo, nimirum 100000000.00000000. Sinus reliqui Secundarij deduci queant.

Secundariorum Sinuum autem ex Toto deductio fit per in-

per inventionem Sinus omnium Primi, perq; Canonis ex primo Sinu continuationem.

Sinus porrò in Canone omnium Primus pro variâ Canonis dispositione & ipse variat.

Si enim Canon Sinuum ad singulos Gradus sit construendus; erit Sinus 1. gradus Primus: si ad dena minuta; erit Sinus 0. grad. 10. minutorum: si ad singula minuta; erit Sinus 0. grad. 1. minut. si deniq; ad dena secunda; erit Sinus 0. grad. 0. minut. 10. secund. Sinus omnium Primus: &c.

In Primi deniq; illius Sinus cognitionem venimus beneficio aliorum intermediorum per Problemata sequentia.

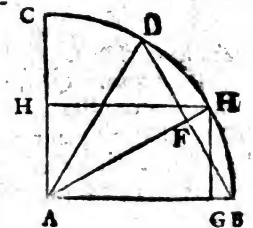
PROBL. I. Latus Sexanguli Circulo inscripti, ejusq; semissem seu Sinum 30. gradum invenire.

REGULA. Radius Circuli est latus inscripti Sexanguli.

Per 15. IV. Elem. Euclid.

RATIO REGULÆ. Si enim Circulum describas, radiumq; five Semidiametrum ejus sexies in circumferentia circumducas, videbis sexangulum Circulo inscriptum, lateraque & invicem, & Radio æquari.

Vel: Si in apposito Quadrante Circuli ABC super basi AB describas Triangulum Æquilaterum ABD, erit ejus Trianguli angulus quilibet graduum 60. ergo & arcus DAB cujus subtensa DB æqualis Radio.



S

PRA-

P R A X I S. Sit ergo AB Radius, qualem supra posuimus,

100000000.000000000.

partium : erit & latus *Sexanguli* seu DB subtenſa 60. grad. e-
 rundem partium : atq; ideo ſemiſſis ſubtenſæ FB ſeu EG Si-
 nus 30. graduum

500000000.000000000.

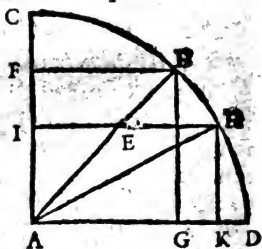
PROBL. II. Latus Quadrati Circulo inſcripti, ejuſq; ſemiſſem ſeu
 Sinum 45. graduum invenire.

R E G U L A. Latus inſcripti Quadrati poteſt duplum
 Circularis Radij. *Per 6. IV. Elem.*

RATIO REGULÆ. Si enim in Circulo duæ Semidiametri
 ſibi mutuò perpendiculares ducantur, dividetur Circulus in
 quatuor Quadrantes : ſi verò porrò extremitates Semidiametre-
 trorum illarum per lineas rectas connectantur, inſcriptum e-
 rit Circulo Quadratum; ipſumq; inſuper etiam diviſum in qua-
 tuor Triangula ad centrum Circuli Rectangula, cujuſ unuſ-
 cujuſvis crura, quæ hîc ſunt duo Radij Circulares, ſimul ſumta
 poſſunt hypotenuſam, ſeu latus Quadrati inſcripti.

Ita in appoſito Circuli Qua-
 drante A D C Recta D C ſubtenſa
 arcui C B D eſt latus Quadrati Cir-
 culo inſcripti, conſtituens cum du-
 abus Semidiametris A C & A D tri-
 angulum Rectangulum Æquicru-
 rum, in quo Hypotenuſa C D poteſt
 crura ſimul ſumta.

P R A X I S. Quare ſi Quadra-
 tum Radij duplicetur, dupliq; Ra-
 dix extrahatur Quadrata; habebimus & in numeris latus Qua-
 drati Circuli inſcripti vel ſubtenſam C D 90. graduum, cujuſ
 dimidium erit Sinus 45. grad. quæſitus.



Radius

Radius	100000000.00000000.
Quadratū	100000000.00000000.00000000.00000000.
Duplum	200000000.00000000.00000000.00000000.
Radix	141421356.23730950.
Latus <i>Quadrati</i> vel subtenſa	90. graduum : cujus
Dimidium.	70710678.11865475.
eſt Sinus 45. graduum quaſitus.	

PROBL. III. *Latus Decanguli Circulo inſcripti, ejusq; ſemiſſem ſeu Sinum 18. graduum invenire.*

REGULA. Latus Sexanguli vel Radium Circuli, ſeca extremâ & mediâ ratione ſeu proportionaliter : majus ſegmentum erit latus Decanguli. *Finckius 17. VII. ex Pappo, Commandino & Campano.*

RATIO REGULÆ. Notum eſt enim, ſi per 10. IV. *Elements.* Triangulum æquicrurum deſcribatur, cujus Angulus ad Baſin utrius anguli æquicruri duplus ſit, baſin æquari majori ſegmento cruris proportionaliter ſecti : ſiq; eidem Triangulo circumſcribatur circulus, eſſe etiam eandem baſin latus *Quinquanguli* Circuli inſcripti, per 11. IV. *Elem.* Si verò ex vertice anguli æquicruri diſtantiâ alterutrius cruris circulus deſcribatur, erit eadem baſis latus *Decanguli* Circulo inſcripti.

PRAxis. Repetito ergo Calculo *Problematis XIII. lib. I.* additisq; potentijs Radij & Semiradij, & ab aggregati

	125000000.00000000.00000000.00000000.
Radice	111803398.87498949.
ſubtracto iterum Semiradio	50000000.00000000.
remanebit ſegmentum Radij proportionaliter ſecti majus,	
vel latus <i>Decanguli</i> quaſitum	61803398.87498949.
cujus ſemiſſis	30901699.43749774.
eſt Sinus 18. graduum.	

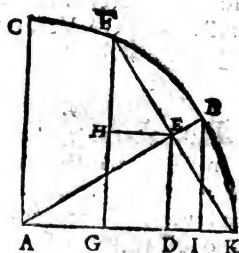
PROBL. IV. *Dato Sinu Recto Arcus Quadrante minoris, Sinum Complementi invenire.*

habebimus & Sinum complementi arcus 18. grad. seu Sinum arcus 72. graduum.

PROBL. V. Dato Sinu Recto arcus, una cum Sinu complementi, Sinum arcus dupli invenire.

REGULA. Sinum Arcus dati multiplica per Sinum complementi : Factum divide per Radium : & habebis dimidium Sinum arcus dupli.

RATIO REGULÆ. Ut enim A B Radius ad Sinum B I vel K E dati arcus B K : sic ejusdem B K arcus complementi Sinus A I vel A E ad E D vel H G dimidium Sinum arcus F K ad prædictum arcum B D dupli.



PRAEAXIS. Inventus est *Probl. III.*

Sinus graduum 18. qui Semissis est lateris Decanguli Circulo inscripti :

quærat autem Sinus graduum 36,

vel Semissis lateris Quinquanguli Circulo inscripti.

Sinus B C vel E D graduum 18. est 30901699.43749474.

Sinus complementi A C vel A E 72. graduum

95105651.61951536.

factus ex his divisus per Radium A B relinquit E I vel H G

29389262.61462365.

cujus duplum F G

58778525.22924730.

est Sinus Rectus 36. graduum quæsitus vel Semissis lateris

Quinquanguli. Ejus autem Complementi seu graduum 54. Sinus

per *Probl. IV.* inventus est

80901699.43749474.

PROBL. VI. Dato Sinu Recto arcus, una cum Sinu Complementi, Sinum arcus dimidiū reperire.

REGULA. Quadratum Sinus Recti dati arcus, Quadratum

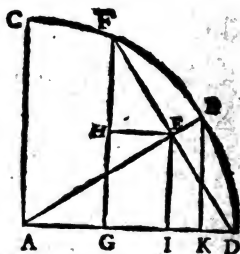
S 3

dratum

dratum Sinus Versi ejusdem arcus, adde : aggregatum erit subtenſa dati arcus, ejusq; dimidium Sinus dimidij arcus quæſitus.

RATIO REGULÆ. Recta enim FD ſubtenſa inter Sinum Rectum FG & Verſum GD dati arcus FBD, eſt duplum Sinus dimidij arcus BD : eandemq; ſubtenſam FD poſſunt Sinus Rectus FG & Verſus GD.

Sinus autem Verſus arcus alicujus habetur ex ſubtractione Sinus Complementi à Radio.



PRAXIS. *Probl. III.* inventus eſt Sinus Graduum 18. vel Semiffis lateris Decanguli

30901699. 43749474.
& per *Probl. proximè antecedens* ejusdem Sinus complementum,
ſeu Sinus Rectus 72. grad.

95105651. 62951536.
Quo ſubtracto à Radio remanebit ejusdem arcus Sinus verſus
4894348. 37048464.

Velim autem habere Sinum arcus 9. graduum. Quadratum ergo Sinus Recti dati nimirum

9549150. 28125262. 73052816. 75276676.
& Quadratum Sinus Verſi jam inventi

239346. 45971685. 65088830. 84759296.
in unā ſummā 9788496. 74096948. 38141647. 60035972.
collecta, exq; ea radix extracta

31286893. 00804618.
dimidiataq; erit ſemiffis lateris *Vigintanguli* ſeu Sinus 9. graduum

15643446. 50402309.
quæſitus, hujus complementi etiam vel graduum 81. Sinus
per *Probl. IV.* exhibebitur

98768834. 05951375.
Ita & : quia *Probl. I.* Sinus Rectus 30. graduum
50000000. 00000000.

Et per

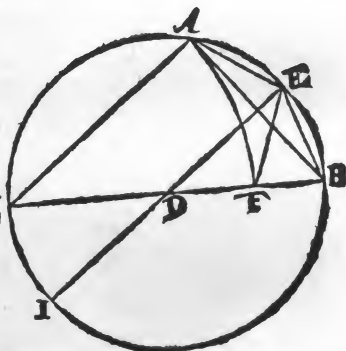
& per *Probl. IV.* Sinus complementi 86602540. 37844386.
 inventi sunt, non ignotus erit ejusdem arcus 30. Graduum Si-
 nus Versus 13397459. 62155614.
 perq; *Calculus* bujus *Problematis* Sinus Rectus arcus dimidij nimi-
 rum 15. graduum, qui est 25881904. 51025207.
 cujus iterum complementi vel Grad. 75. Sinus *juxta Præcepta*
Probl. IV. erit 96592582. 62890683.
 Sinus autem 15. graduum est semissis lateris *Dodecanguli* Cir-
 culo inscripti.

ALITER ET FACILIUS

per subtensas.

REGULA. Complementi subtensam aufer à Diamo-
 tro : residuum multiplicatum Radio erit quadra-
 tum subtensæ dimidij arcus.

RATIO REGULÆ. Dato
 enim Arcu AB, erit ejus sub-
 tensa AB; subtensa autem
 complementi AC: ablatâq;
 à CB Diametro lineâ CF,
 quæ æqualis sit lineæ CA:
 residuum FB multiplicatum
 Radio DB æquale erit Qua-
 drato Rectæ EB, subtensæ di-
 midij arcus EB. Nam cum
 Triangula DEB & EFB æ-
 quicrura inter se similia sint
 & laterum homologorum, e-
 rit ut DB ad EB, ita EB ad FB, unde ratio calculi est satis ma-
 nifesta.



PRAEAXIS. Esto iterum arcus AB 18. grad. quærendaq; sit
 subten-

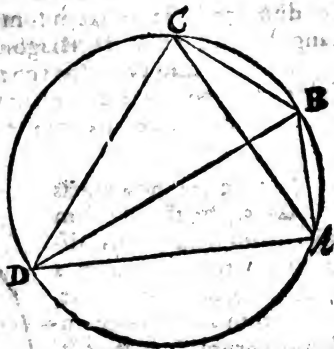
subtenſa 9. grad. Cum itaq; Sinus 18. grad. ſit *ex ſuperioribus*
 erit ſubtenſa arcus AB 30901699. 43749474.
 Sinus autem Complementi 18. graduum *prius etiam* inventus
 eſt 61803393. 87498948:
 erit ergo AC ſubtenſa Complementi AC 95105651. 62951536.
 quæ ſubtracto à Diametro BC 190211307. 25903062.
 relinquit FB 200000000. 00000000.
 quæ Radio DE vel DB multiplicata, vel 16. Cyphris aucta, pro-
 ducit 9788696. 74096928. 00000000. 00000000.
 unde ſi radix extrahatur, prodibit iterum EB ſubtenſa arcus 9,
 graduum 15643446. 50402309.
 qui calculus priori multo eſt facilior.

PROBL. VII. Datis Sinibus duorum arcuum inæqualium, una cum Sinibus Complementorum, Sinum Summæ vel Differentiæ illorum inquire.

REGULA. Multiplica alternatim Sinum arcus uni-
 us per Sinum Complementi alterius; producta ſi
 componas, & composita per Radium dividas, habe-
 bis Sinum Summæ datorum arcuum: ſi verò pro-
 ductum minus de majore ſubtrahas, reliquumq; i-
 terum per Radium dividas, habebis Sinum Diffe-
 rentiæ eorundem arcuum.

RATIO REGULÆ. Nam, ſive Summæ Sinus quærat
 ſive Differentiæ, concludunt in primo caſu ſubtenſæ datorum
 arcuum AB 15. grad. & BC 18. grad. item ſubtenſæ Comple-
 mentorum AD quidem arcus AB & DC arcus BC quadrila-
 terum $ABCD$, cujus Diametri ſunt BD Diameter Circuli cir-
 cumſcri-

eumscripti & AC subtensa
 summæ quæsitæ. Atqui Re-
 ctangula, quorū unum sub
 lateribus Quadrilateri op-
 positis, nimirum AB sub-
 tensa 15 . grad. & DC sub-
 tensa complementi 18 . gr.
 alterum sub subtensâ BC
 18 . gr. & AD subtensâ com-
 plementi 15 . grad. compre-
 henditur, simul sumta æ-
 quantur Rectangulo quod
 ex Diametris Quadrilateri
 DB noto & AC subtensâ
 summæ arcuum ignota de-



scribitur. Demonstrationem linearem, si cui sequens Nume-
 ralis non sufficit, videat, qui volet, apud *Ptolemaum* lib. 1. *μεγάλ.*
συνλγ. c. 9. *Copernicum* *Revolut.* lib. 1. c. 12. Theorema. 2. *Pitifi-*
cum 54. l.

PRAXIS. Esto ergo Arcus AB , ut prius, 15 . grad. erit AB
 ejus Sinus (fingemus expeditioris calculi gratiâ Circulum di-
 visum non in 360 . sed in 180 . saltem gradus; ita enim & subten-
 sæ ipsæ Sinus erunt) 25881904.51025207 ,
 qui multiplicatus per Sinum complementi arcus 18 . grad. CB ,
 hoc est, per latus Quadrilateri oppositum CB

95105651.62951536 ,
 exhibet Productum primum

$24615153.93860415.72670452.55367952$.
 Deinde & arcus CB 18 . grad. Sinus CB 30901699.43749474 .
 ductus in AD Sinum complementi Arcus AB 15 . graduum

96592582.62890583 .
 exhibet Productum secundum

$29848749.56289854.38286628.00750742$:
 T hxc

hæc duo producta in unam summam collecta, exhibent Rectangulum ex DB & AC Diagonijs

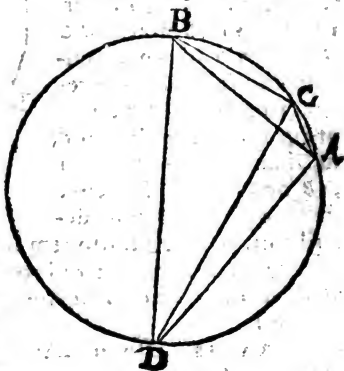
54463903. 50150270. 10958080. 56118794.
dividendum per DB Radium, ut remaneat Sinus AC arcus AC
33. grad. compositi ex arcubus AB 15. & BC 18. graduum nimirum
54463903. 50150270.

RATIO secundæ partis
REGULÆ. In altero etiam casu, quando AC Sinus Differentiæ datorum arcuum A B 18. grad. & BC 15. quæritur, ex datorum arcuum & complementorum DC & AD , quæsitæ etiam arcus AC Sinibus describitur Quadrilaterum $ABCD$, danturq; insuper & Diagonales DC & AB : æquanturq; iterum Rectangula duæ ex BD & CA ; item ex BC & AD descripta, & simul sumpta, Rectangulo ex Diagonijs AB & CD descripto: Rectangulum ex BC & AD descriptum subtractum à Rectangulo ex AB & DC descripto, relinquit Rectangulum ex BD & CA descriptum: id autem Radius BD divisum exhibet Sinum Differentiæ AC quæsitum.

P R A X I S. Ergò Rectangulum ex Sinu arcus BC 15. graduum & Sinu complementi arcus AB 18. graduum nempe A D prius inventum

24615152. 93860415. 72670452. 55367952.
subtractum à Rectangulo ex Sinu arcus A B 18. grad. & Sinu complementi Arcus BC 15. grad. nempe D C

29848749. 56289854. 38286628. 00750742.
relin-



relinquit Rectangulum ex BD & CA

5233595. 62429438. 65616165. 45382790.

dividendum Radio ut remaneat Sinus Differentiæ Datorum
duorum arcuum AB 18. grad. & BC 15. nimirum Sinus Arcus
3. grad. AC quæsitus

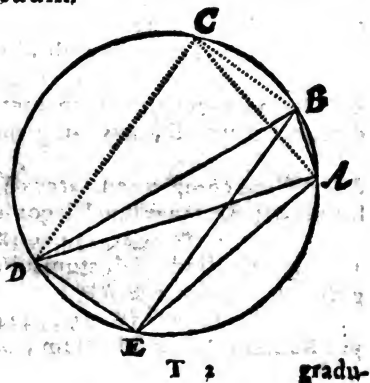
5233595. 62429438.

*PROBL. VIII. Datis Sinibus duorum arcuum inequalium, una cum
Sinibus Complementorum, Sinum Complementi Summæ vel Differentiæ
illorum arcuum inquirere.*

REGULA. Multiplica Sinum arcus unius per Sinum
arcus alterius : & Sinum etiam Complementi arcus
unius per Sinum complementi arcus alterius. Eo
facto si productum minus auferas à majore, & resi-
duum Radio divides; habebis Sinum complemen-
ti summæ datorum duorum arcuum. Si verò pro-
ductum utrumq; componas, & compositum radio
dividas; habebis Sinum Complementi differentiæ
datorum duorum arcuum.

RATIO REGULÆ.

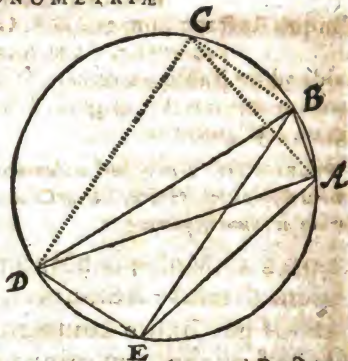
Quia enim iterum in pri-
mo membro Problematis pro inventione Sinus
complementi summæ, datis duobus arcibus CB vel
 DE 18. grad. ejusq; Sinu D
 E & Sinu complementi C
 D vel EB ; item BA 15. gr.
ejusque Sinu AB & Sinu
complementi AD , quæri-
tur Arcus compositi ABC



T 2

gradu-

graduum 33. Sinus complementi AE ; perq; Sinus arcuum dator. DE & AB , Sinumq; Totum BD & Sinus complementi summe quadrilaterum concluditur, cujus Diagonales AD & BE sunt Sinus complementorum datorum Arcuum; Rectangulumq; horum æquivaleret Rectangulis istorum & illorum simul sumtis; evidens est, si Rectangulum è datis Sinibus AB & DE , auferatur à Rectangulo Sinuum complementorum datorum BE & DA , relinquitur Rectangulum ex BD & AE descriptum, siq; hoc per Sinum Totum BD dividatur, remanere AE Sinum complementi arcus compositi ABC grad. 33.



P R A X I S. Fiat ergò Rectangulum ex datis Sinibus AB 15. grad.

& BC vel DE 18. grad.

hoc est, unus per alterum multiplicetur, prodibitq;

7997948. 34045748. 96568448. 66991118.
deinde multiplicentur etiam inter se Sinus complementorum dati, nimirum BE Sinus complementi arcus DE

& DA Sinus complementi arcus AB factum erit Rectangulum Diagoniorum

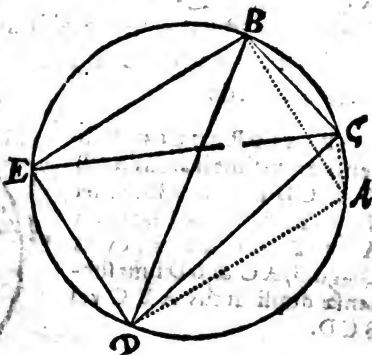
à quo si prius illud productum subducatur, remanebit Rectangulum laterum BD & AE

per Radium BD dividendum, ut remaneat latus AE Sinus com-

Complementi Arcus compositi AC 33. grad.

83867056. 79454241.

RATIO secundimem-
bri REGULÆ. In altero
casu, quando Sinus com-
plementi Differentiæ da-
torum arcuum quæritur,
concluditur iterum a da-
torum arcuum BC 15. gr.
& (AB vel) ED 18. grad.
Sinibus BC & ED, item
ab eorundem arcuum Si-
nibus complementorum
CD & EB Quadrilaterum
BCDE, suntq; ejus Dia-
gonij Radius BD & CE Si-
nus complementi Diffe-
rentiæ vel Arcus CA 3. grad. quæsitus, quorum Rectangulum
æquale Rectangulis ex datis Sinibus Rectis BC & DE, & ex
Sinibus complementorum EB & DC simul sumtis.



PRÆXIS. Ergo si Rectangulum ex BC & ED per proximè
priorem operationem inventum

7997948. 34045748. 96568448. 66991118.

ad Rectangulum ex EB & CD *ibidem* investigatum

91865005. 13499989. 91246235. 94939088.

addas, procreabis Rectangulum Diagoniorum DB & EC

99862953. 47545738. 87814684. 61930206.

quod Radio BD divisum exhibet EC

99862953. 47545739.

Sinum complementi Differentiæ datorum arcuum CA seu 3.
graduum quæsitum.

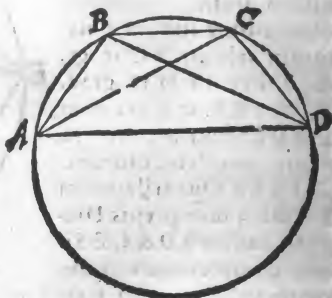
T 3

PROBL.

PROBL. IX. Data subtensa arcus semicirculo minoris, una cum subtensa dupli arcus, subtensam tripli arcus invenire.

REGULA. Quadratum subtensæ simpli arcus aufer à Quadrato subtensæ dupli arcus: residuum divide per subtensam simpli arcus: Quotus erit subtensa tripli arcus.

RATIO-REGULÆ. Subtensæ enim simpli arcus AB, BC, & CD cum AD subtensâ Tripli arcus Quadrilaterum ABCD concludunt, cujus Diagonij AC & BD sunt subtensæ dupli arcus ABC vel BCD.



PRAXIS. Inventus ergo sit per Probl. VI. Sinus 1. gr.
30. min.

& Probl. VII. Sinus dupli nimirum grad. 3.

quærendusq; sit Sinus illius Tripli, nempe 4. grad. 30. min. Erit ergo subtensa simpli arcus AB vel CD

subtensa autem dupli AC vel DB

Si ergo ab hujus Quadrato

subtrahatur Quadratum illius

remanebit Rectangulum ex BC subtensâ simpli arcus & AD subtensâ tripli arcus quæ sita descriptum

Id tandem per BC subtensam simpli arcus

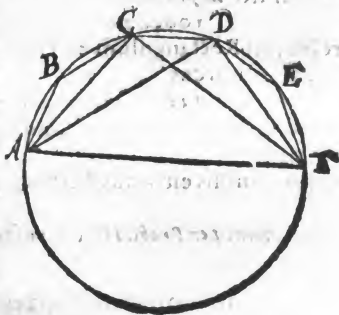
52353

5235389. 66157458.
 divisum, relinquit in Quoto subtensam AD arcus ABCD gr.
 4. min. 30. quæsitum; videlicet 15691819. 14556944.
 cujus dimidium 7845909. 57278472.
 est Sinus 4. gr. 30. min. quæsitus, cujus Sinus complementi seu
 Sinus 85. gr. 30. min. per præcepta Probl. IV. est
 99691733. 37331278.

PROBL. X. Data subtenſa arcus Semicirculo minoris, una cum subtenſa dupli & tripli arcus, subtenſam quintupli arcus invenire.

REGULA. Quadratum subtenſæ dupli arcus aufer à Quadrato subtenſæ tripli arcus, residuum per subtenſam datam diviſum, offert in quoto subtenſam arcus Quintupli.

RATIO REGULÆ. Iterum enim, ut in proximè præcedenti Problemate arcu dato AB, cujus subtenſa nota eſt, quater in BC, CD, DE & EF repetito, ſubductisq; ſubtenſis, uti decet; ductis etiam ſubtenſis AC & FD duplorum arcuum ABC & DEF; item ſubtenſis AD & CF triplorum arcuum ABCD & CDEF; concludent ſubtenſæ ſimpli arcus CD, duplorum AC & DF & ſubtenſa quintupli arcus AF Quadrilaterum ACDF, cujus Diagonij AD & CF ſubtenſæ triplorum arcuum Rectangulum conſtituunt, quod æquivaleret Rectangulo ex ſubtenſis duplorum arcuum AC & DE, item Rectangulo ex ſubtenſa



tenſa ſimpli arcus CD & ſubtenſa Quintupli arcus AF, ſimul ſumtis.

P R A X I S. Eſto ergo iterum datus Sinus 1. grad. 30. min.

2617694. 83078729.

ſitq; Arcus AB 3. graduum; erit ergo ſubtenſa AB vel CD

5235389. 66157458.

Sinus autem 3. grad. *Probl. VII.* inventus eſt

5233595. 62429438.

Unde ſubtenſa arcus AC vel DF arcus dupli erit

10467191. 24858876.

Sinus etiam 4. grad. 30. min. *proximè præcedenti Problemate* inventus eſt

7845909. 57278472.

& ſubtenſa tripli arcus AD vel CF

15691819. 14556944.

Hujus Quadratum (vel Rectangulum ex Diagonijs)

2462331. 88097859. 63061518. 18619136.

minus ſubtenſæ arcus ſimpli AC vel DF

10467191. 24858876.

Quadrato, in *proximi Problemati calculo invento*

1095620. 92634533. 44134269. 15983376.

relinquit Rectangulum ex CD ſubtenſa ſimpli & AF ſubtenſa quintupli arcus

1366710. 95462726. 18867049. 02635760.

quod diviſum per CD relinquit ſubtenſam AF arcus AC F

15. grad.

26105238. 44401324.

cujus ſemiſſis eſt Sinus Rectus 7. grad. 30. min.

13052619. 22200662.

cui iterum *per Probl. IV.* correfpondet Sinus complementi

99144486. 13738106.

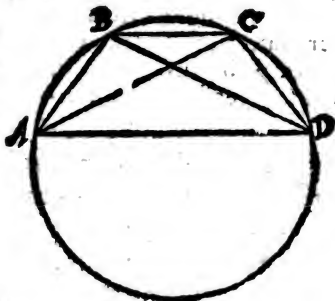
Ad Exemplum Problematum duorum proximorum
faciliſimum fuerit etiam ſubtenſas arcuum ſeptupli,
noncupli, undecupli, tredecupli, &c. ſi cui placeat,
inveſtigare.

P R O B L.

PROBL. XI. *Datâ subtensâ arcus, subtensam tertia partis illius arcus invenire.*

REGULA. Subtensæ datæ subtripulum nonnihil autum pone pro subtensa quæsitâ, & per illam inquire subtensam datam, *juxta doctrinam IX. Probl.* Quam si eandem inveneris, habes quod quæсивisti. Sin autem; notâ Differentiam + vel —, & repetitâ eâdem operatione, per aliam positionem subtensæ quæsitæ, iterum notâ + vel —. Tandem per Regulam Falsi veritatem ipsam invenies.

RATIO REGULÆ. Cum enim curvum & Rectum quæ terminos habent eisdem longitudine variant ita ut curvum sit longius Recto, subtripulum autem de ambitu curvi participat, facile apparet subtripulum vel subtensam AB necessario paulò majorem assumendam esse, quam est datæ subtensæ AB subtripulum.



Operationis autem reliquæ ratio nota est, *ex Probl. VII.*; uti & Regulæ Falsi ex libellis Arithmetichis, unde ex petantur.

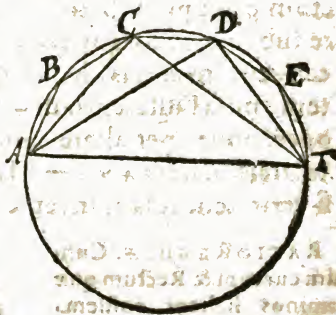
PROBL. XII. *Datâ subtensâ arcus, subtensam quinta partis illius arcus invenire.*

REGULA. Subtensæ datæ subquintuplum nonnihil autum-

auctum, pone pro subtensa quæsita, & ejus beneficio inquire subtensam datam, per præcepta *Probl. X.* In reliquo operare, ut in *Problemate proximo.*

RATIO REGULÆ eadem est, quæ in antecedenti.

PRAESES horum duorum *Problematum* proximorum cōsulō omitto, cum quia calculi prolixitas id jubet, tum quia sufficere puto me ea indicasse; præsertim autem, quia in superioribus exercitatio non difficile putem ex prioribus, unde hi calculi dependent, illa derivare.



Ut autem, cui bono hæc *Problemata* proposita sint, pateat, sciendum est facillimum esse ex ijs totum Canonem Sinuum conficere per contingam bisectionem cum quorum Sinus Recti & complementorum dantur, donec ad minuta secunda imparis numeri deveniatur.

Ita enim ex Sinu Recto arcus 30. gr. *Probl. I.* invento, exque ejus Sinu complementi seu arcus 60. grad. per *Probl. IV.* investigato deducuntur sequentium omnium arcuum Sinus, saltem per bisectionem *Probl. VI.* & complementa *Probl. IV.*

Eâdem ratione ex Sinu Recto Arcus 45. gr. beneficio
Probl. II. reperto sequentium etiam adjunctæ Tabulæ
 arcuum Sinus procreantur.

Gr.	{	45	{	22.30.	{	11.15.	{	5.37.30.	{	2.48.45.	
											87.11.15.
						{		{	{	42.11.15.	
											47.48.45.
					{	78.45.	{	39.22.30.	{	19.41.15.	
											70.18.45.
						{		{	{	25.18.45.	
											64.41.15.
					{	67.30.	{	50.37.30.	{	8.26.15.	
											16.52.30.
					{	33.45.	{	73.7.30.	{	36.33.45.	
											53.26.15.
					{	56.15.	{	28.7.30.	{	14.3.45.	
											75.56.15.
					{	45.	{	61.52.30.	{	30.56.15.	
											59.3.45.

Ex Sinu Recto autem arcus 18. Graduum descendit u-
 berrima sequentium seges : uti & postea ex 48. grad.
 aggregato ex 30. & 18. gr. per *Probl. VII.* invento se-
 ferunt sequentium etiam arcuum Sinus.

Gr. < 72. Vide A.		9		4. 30.		2. 15.		1. 7. 30.		{		0. 33. 45.	
Gr. < 72. Vide A.		18		85. 30.		42. 45.		21. 22. 30.		{		10. 41. 15.	
Gr. < 72. Vide A.		81		40. 30.		20. 15.		10. 7. 30.		{		5. 3. 45.	
Gr. < 72. Vide A.		49. 30.		24. 45.		12. 22. 30.		6. 11. 15.		{		8. 48. 45.	
Gr. < 72. Vide A.		65. 15.		32. 37. 30.		57. 22. 30.		28. 41. 15.		{		61. 18. 45.	

A 72	{	36. Propa.	{	6. 45.	{	3. 22. 30.	{	1. 41. 15. 88. 18. 45.
					{	86. 37. 30.	{	43. 18. 45. 46. 41. 15.
			{	13. 30.	{	41. 37. 30.	{	20. 48. 15. 69. 11. 45.
			{	83. 15.	{	48. 22. 30.	{	24. 11. 15. 65. 48. 45.
			{	27.	{	19. 7. 30.	{	9. 33. 45. 80. 26. 15.
			{	76. 30.	{	70. 52. 30.	{	35. 26. 15. 54. 33. 45.
			{	51. 45.	{	25. 52. 30.	{	12. 56. 15. 77. 3. 45.
			{	54.	{	64. 7. 30.	{	32. 3. 45. 57. 56. 15.
			{	15. 45.	{	7. 22. 30.	{	3. 41. 15. 86. 18. 45.
			{	31. 30.	{	82. 37. 30.	{	41. 18. 45. 48. 41. 15.
			{	74. 15.	{	37. 7. 30.	{	18. 33. 45. 71. 26. 15.
			{	63.	{	52. 52. 30.	{	26. 26. 15. 63. 33. 45.
			{	19. 15.	{	14. 37. 30.	{	7. 18. 45. 82. 41. 15.
			{	58. 30.	{	75. 22. 30.	{	37. 41. 15. 52. 18. 45.
			{	60. 45.	{	30. 22. 30.	{	15. 11. 15. 74. 48. 45.
			{	60. 45.	{	59. 37. 30.	{	29. 48. 45. 69. 11. 15.

		0.45	{	0.22.30.	{	0.11.15.
				89.48.45.	{	89.48.45.
		1.30	{	89.37.30.	{	44.48.45.
				45.11.15.	{	45.11.15.
		3	{	44.37.30.	{	22.18.45.
				67.41.15.	{	67.41.15.
		89.15.	{	45.22.30.	{	22.41.15.
				67.18.45.	{	67.18.45.
		88.30.	{	22.7.30.	{	11.3.45.
				78.56.15.	{	78.56.15.
		44.15.	{	67.52.30.	{	33.56.15.
				56.3.45.	{	56.3.45.
		45.45.	{	22.52.30.	{	11.26.15.
				78.33.45.	{	78.33.45.
		67.7.30.	{	33.33.15.	{	33.33.15.
				56.27.45.	{	56.27.45.
		10.52.30.	{	5.26.15.	{	5.26.15.
				84.33.45.	{	84.33.45.
		79.7.30.	{	39.33.45.	{	39.33.45.
				50.26.15.	{	50.26.15.
		34.7.30.	{	17.3.45.	{	17.3.45.
				72.56.15.	{	72.56.15.
		55.52.30.	{	27.56.15.	{	27.56.15.
				62.3.45.	{	62.3.45.
		11.37.30.	{	5.48.45.	{	5.48.45.
				84.11.15.	{	84.11.15.
		78.22.30.	{	39.11.15.	{	39.11.15.
				50.48.45.	{	50.48.45.
		33.22.30.	{	16.41.15.	{	16.41.15.
				73.18.45.	{	73.18.45.
		28.18.45.	{	28.18.45.	{	28.18.45.
				61.41.15.	{	61.41.15.

C	66	{	33	{	16. 30.	{	8. 15.	{	4. 7. 30.	{	2. 3. 45.																																																														
												{	87. 56. 15.																																																												
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																																																																						{	30. 11. 15.		
																																																																								{	59. 48. 45.

Deniq; si subtensæ 3. graduum *per Probl. VII.* inventæ subtripulum *ope Probl. XI.* investigetur, ut Sinus 0. gr. 30. m. habeatur; arcusq; 0. gr. 30. m. continuè *per Probl. V.* duplicetur, per 1. 2. 4. 8. 16. 32. 64. gradus: idemq; 0. gr. 30. m. arcus cum suo dimidio 0. gr. 15. m. componatur, ut constet *per Probl. VII.* Sinus arcus 0. gr. 45. min. hic etiam cum 0. gr. 30. m. componatur, compositiq; 1. gr. 15. m. continuè dupla assumantur, deveniemus tandem ad 80. gr. ut videre est 1. gr. 15. m. 2. gr. 30. min. 5. gr. 10. 20. 40. 80. gr: habebimus iterum alias duas series satis locupletes sub signis grad. 64. & 80.

Quod ubi factum fuerit, erit Canon Sinuum diductus ad differentias arcuum 0. gr. 3. min. 45. sec. ordine scilicet sequenti:

0°.	3'.	45".		89°.	56'.	15".
0.	7.	30.		89.	52.	30.
0.	11.	15.		89.	48.	45.
0.	15.	0.		89.	45.	0.
0.	18.	45.		89.	41.	15.
0.	22.	30.		89.	37.	30.
0.	26.	15.		89.	33.	45.
0.	30.	0.		89.	30.	0.

&c.

Quomodo autem interstitia illa compleri debeant, id, qui volet, videat in *Stevini* Hypomnematibus Mauritanis; aut utatur eo processu, quem capite sequenti Nos usurpabimus.

Quam haftenus instituimus recensitionem condendi Canonis per continuam arcuum datorum, Complementorumq; bisectionem, ea nostro quidem proposito parum vel nihil confert: damus autem libertati legentium eamne rationem sequi quis malit, aut quam subijcimus.

Nos interim *ope Problematum* hujus Capituli invenimus

X 2

Sinum

Sinum Rectum 1. minuti secundi, vel arcus 0. gr. 6. min. 1. secundi, partium, qualium Sinus Totus est

100000000. 00000000.

484. 81368111.

Sinumq; Complementi vel Sinum Rectum arcus graduum 89. 59. min. 59. sec. 99999999. 99882478.

Conveniunt autem numeri nostri examulsiim cum Pitisici Trigonom. lib. II. p. 71. & Ludolphi à Ceuln libro de Circulo & Adscriptis p. 38. inventis, ut tutò sequentia superstruere liceat.

CAPUT V.

De

CANONIS SINUUM EX SINU RECTO

in Canone omnium Primi continuatione.

INvenimus hætenus Canonis nostri Sinum omnium Primum, nimirum Sinum Rectum 0. gr. 0. min. 1. sec. restat, ut doceamus quomodo ex eo Totus Canon continuari vel derivari possit.

Canonis nostri jam editi Sinus omnium Primus quidem est Arcus 0. gr. 0. min. 10. sec. non autem 0. gr. 0. min. 1. sec. verum quia eadem operâ, quâ hunc Canonem confecimus, fundamenta & jacere volumus & alijs ostendere Canonis novi condendi ad singula secunda; malui illum quam hunc Primum dicere.

Continuatio Canonis ex Sinu primo alia est in Trientibus Quadrantis Circuli extremis, alia in Triente medio.

Sinus Trientum extremorum, hoc est, Sinus à 0. grad. ad 30. gr. & à gr. 60. ad 90. gr. quorum isti illorum
Com.

Complementa sunt, inveniuntur absq; omni Multiplicatione, Divisione, Radicis Quadratae Extractione, quæ non possunt non tædiq; operantem obruere, per solam quasi additionem.

Ejus tamen additionis vis & ratio dependet maximam partem ex *Problemate V. antecedentis Capitis*, ubi quomodo dato Sinu Recto Arcus, una cum Sinu Complementi, Sinus arcus dupli haberi possit; docebatur. Ut autem commodius, quid velim, Lectori pateat, adhibebimus sequentis schematis declarationem tantò uberiores. In

rationem tantò uberiorem. In Quadrante A B C esto Arcus quicunq; D C ejusq; Sinus D I notus una cum L D vel A I Sinu Complementi ejusdem arcus D C itidem noto : erunt ergo Triangula A I D & L A D æqualia datorum laterum ; siquidem A D est radius Circuli. Sit deinde F D duplum dati arcus D C : æquabitur ergò Arcus E D arcui D C, Sinus E N Sinui D I & A N

Sinus Complementi arcus ED Sinui complementi Arcus DI, nimirum lineis L D vel AI, Triangulumq; A E N Triangulo AD ¶. Sed & Triangulum HEC eodẽ angulos habet cum Triangulo AD ¶; siquidem HCE angulus illius æquatur NC A angulo hujus Trianguli; unde & præter Rectos EHC & AID reliqui HEC & DAC æquantur: quò nomine Triangula dicta ADI & HEC sunt homologorum laterum, hoc est, ut AD radius ad Complementum AI, ita EC duplum Sinus datĩ DI ad HE, Sinum arcus Dupli EC: Et, ut AD radius ad Sinum DI, ita EC ad HC, quod à radio AC subtractum relinquit AH

X 3

Com-

Complementum arcus ED . Effet ergo in posterum iste processus calculi.

I. Pro Sinu EH .

Posito scil. arcu DC o. gr. o. min. i. sec.

Ut AD radius 100000000. 00000000.
ad Complementum AI 99999999. 99882478.
ita CE duplum DC Sinus dati 969. 62736222.
ad EH Sinum arcus dupli EC quæsitum.

II. Pro Sinu Complementi AH .

Ut AD radius 100000000. 00000000.
ad Sinum DI 484. 81368111.
ita CE Duplum DC Sinus dati 969. 62736222.
ad HC , subtrahendum à Radio A C

100000000. 00000000.

ut relinquatur AH Complementum quæsitum.

Ex quibus apparet, primò, pro quovis Sinu Recto, ejusq; complemento inveniendis, requiri duas multiplicationes radio-
sas: secundò omnes illas multiplicationes fieri per CE

969. 62736222.

quem numerum si multiplicemus per singulos digitos inq; peculiari tabella vel chartâ asservemus, posse nos liberari omni illâ multiplicatione, & rem omnem per solam additionem perficere.

Multiplicatio autem ipsius CE in singulos digitos talis est:

1.	0969. 62736222.
2.	1939. 25472444.
3.	2908. 88208666.
4.	3878. 50944888.
5.	4848. 13681110.
6.	5817. 76417332.
7.	6787. 39153554.
8.	7757. 01899776.
9.	8726. 64625998.
	9696. 27362220.

Ad

planeq; negligantur. Nos 13. series negligemus omnino, reli-
quas 3. reſecabimus, ut tanto accuratiores maneat noſtri nu-
meri reſidui: ſientq; ea omnia ad exemplum prioris operati-
onis ſequens contractum.

9	87266462599	8
9	8726646259	98
9	872664625	998
9	87266462	599
9	8726646	259
9	872664	626
9	87266	463
9	8726	646
9	872	664
9	87	266
8	7	757
8		775
2		19
4		3
7	96962736220	855
8	vel 969.62736221, ut prius:	
	Sinus Rectus 0. gr. 0. min. 2. ſecundor.	

Pro Sinu complementi verò ſcribe lavorſum, uti prius Si-
num datum, & e regione cuiuſq; numeri multiplos tabellæ,
eorum ſummam, ubi à Sinu Toto A C ſubtraxeris, remanebit
Sinus Complementi quaſitus A H.

4	387850944888.
8	775701899776.
4	387850944888.
8	775701899776.
1	096962736222.
3	290888208666.
6	581776417332.
8	775701899776.
1	096962736222.
1	096962736222.
1	096962736222.
	47008861179285.85416642.
	100000000.00000000.
Sin. T.	100000000.00000000. A C.
	470039. Subtr.
AIC.	99999999.99529911. Sinus Compl. quaſitus.

Brevi-

Brevius.

4	387850	944	
3	77570	189	
4	3878	509	
3	775	702	
1	09	696	
1	2	908	
6		582	
8		77	
1		1	
1	470088	608	Subtrahe ut prius &c.

Deinceps pro inventione arcuum 3. 4. 5. &c. secundor. remonentur lineæ obscuræ schematis A D & E C, accipiturq; F D pro subtensa 2. secundor.

Ponatur ergo D I Sinus 1. secundi, A I vel K F ejusdem Complementi Sinus, E H Sinus 2. secundor. paulò antè inventus, ejusque Complementum A H.

F D autem est subtensa 2. secundorum, quam in Tabellam coniecimus, suntq; proportionēs, ut prius,

1. Pro Sinu.

Ut A E Sinus Totus, ad A H Sinum Complementi prius inventum: sic F D subtensa tabulata ad F M, cui si addideris D I vel M G Sinum 1. sec. habebis F G Sinum 3. secundor.

2. Pro Sinu Complementi.

Ut A E Sinus Totus ad E H Sinum paulò antè inventum: sic F D subtensa Tabulata ad D M. quod si subtraxeris à D K Sinu Complementi 1. sec. habebis K M Sinum Complementi 3. secundor.

Y

Pro

Pro Sinu o. gr. o. min. 5. sec.

Pro Compl. 89. gr. 59. min. 55. sec.

Sinus Compl. 4. sec.

Sinus 4. sec.

Sinus Compl. 5. sec.

Sinus 5. sec.

Pro Sinu o. gr. o. min. 6. sec.

Pro Compl. 89. gr. 59. min. 54. sec.

9	87266461599	8
9	8726646259	98
9	872664625	998
9	87266462	599
9	8726646	259
9	872664	626
9	87266	463
9	8726	646
9	872	665
8	77	570
1	0	969
1		097
6		87
		6

969.62736104.

1454.44104328. Sin. 3. sec.

2424.06840532. Sin. 5. sec.

1	0969627	362
9	872664	626
3	29088	821
9	8726	646
2	193	925
5	48	481
4	5	817
7		678
2		19
4		4
3	1880356	
3	99999999.98942301.	Compl. 3. sec.
	99999999.97061945.	Compl. 5. sec.

Pro Sinu o. gr. o. min. 6. sec.

Pro Compl. 89. gr. 59. min. 54. sec.

9	87266461599	8
9	8726646259	98
9	872664625	998
9	87266462	599
9	8726646	259
9	872664	626
9	87266	463
9	8726	646
9	872	665
7	67	874
0	0	000
6		582
1		09
9		9

969.62736193.

1939.25472433. Sin. 4. sec.

2908.88208626. Sin. 6. sec.

2	1939254	724
4	387850	944
2	19392	547
4	3878	509
0	000	000
6	58	177
8	7	757
4		388
0		00
5		5
3	2350443.	
1	99999999.98119645.	Compl. 4. sec.
	99999999.95769102.	Compl. 6. sec.

TRIGONOMETRIÆ

Pro Sinu o. gr. o. min. 7. feb.

[illegible]

Pro Sinu o. gr. o. min. 1. sec.

[illegible]

Pro Compl. 89. gr. 59. min. 53. sec.

2	1939254	724
9	871664	626
8	00000	000
8	7757	019
8	775	701
8	77	570
2	1	939
8		000
8		77
6		6
2	<hr/>	
6	2820532.	
	99999999.97061945.	Compl.5.fec.
	<hr/>	
	99999999.94241413.	Compl.7.fec.

Pro Compl. 89. gr. 59. min. 52. sec.

3	1908882	086
3	190888	208
9	87266	462
3	1908	882
6	581	776
9	87	266
5	4	848
7		678
6		58
7		7
1	<hr/>	
2	3190620.	
	99999999.95769202. Compl. 6. sec.	
	99999999.92478582. Compl. 8. sec.	

Invento Sinu Recto 0. grad. 0. min. & 10. sec. qui à Pitisci-
 numeris nihil plane differt, si tædium continuationis effugere
 velis, præsertim ad singula secunda; suffecerit, si Sinum 0. gr.
 0. min. & 10. sec. iterum pro Sinu Primo ponas, ejusq; duplum
 in Tabellam promptuariam conjicias, indeq; quæras processu
 priori, Sinus Rectos arcuum

0°. 0'. 1"0.	itemq; compl.	89°. 59'. 5"0.
0. 0. 20.		89. 59. 40.
0. 0. 30.		89. 59. 30.
0. 0. 40.		89. 59. 20.
0. 0. 50.		89. 59. 10.
0. 1. 0.		89. 59. 0.

Ex qua serie iterum, si ad singula secunda Canonem velis
 diductum, ope differentiarum primar. secundar. tertiar. si o-
 pus, Sinuum ante 0°. 0'. 1"0. facilimè id efficere poteris; si-
 quidem Differentiæ illæ ad sensum parum vel nihil variant:
 inprimis si Sinum Totum duabus figuris majorem assumseris,
 quàm is est, quem in Canone deinceps usurpare völueris.

Sed nec sic omne tædium superavimus: restant enim ejus-
 modi operationes, 44. antequam in cognitionem Sinus Recti
 1. gr. pervenias; 10784. autem operationes, usq; ad primi & ul-
 timi Trientis perfectionem.

Si igitur iterum Sinum Rectum 0°. 1'. 0". pro Sinu Pri-
 mo ponas, eadèmq; viâ calculum tractes quo ante, habebis ad
 Sinum Rectum 1°. 0'. 0". operationes saltem 59. ad extremor-
 um Trientum autem Completionem usq; 1799: eritq; seri-
 es talis per singula scilicet minuta:

0°. 1'. 0"

0°. 1.	<i>& Compl.</i>	89°. 59'.
0. 2.		89. 58.
0. 3.		89. 57.
0. 4.		89. 56.
0. 5.		89. 55.
0. 6.		89. 54.
0. 7.		89. 53.
0. 8.		89. 52.
0. 9.		89. 51.
0. 10. &c.		89. 50. &c.

Quo factò facilimum fuerit ad dena vel singula etiam secunda descendere : atq; ita extremos Canonis Sinuum Trientes à 0°. ad 30°. & à 60°. ad 90°. pertexere : juxta ea scilicet, quæ paulò ante sunt dicta.

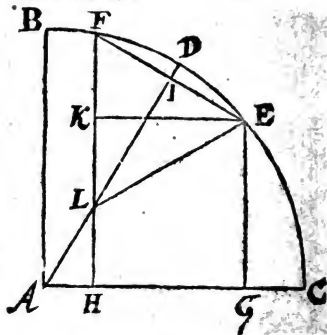
Verùm multò faciliior est & expeditior Trientis medij constructio per solam subtractionem, cujus vis & ratio dependet è Regulà subsequenti :

REGULA. Arcum cujus Sinum vis, subtrahe à 60. gr. & habebis Arcum minorem 30. gradibus : quem si etiam ad 60. gr. addideris, habebis majorem 60. gradibus : deinde Sinum arcus minoris à Sinu arcus Majoris subtrahe, & habebis Sinum Arcus Tui quæsitum.

RATIO REGULÆ. Differentia enim Sinuum arcuum duorum à 60. gradibus hinc inde pariter distantium, est æqualis Sinui Distantiæ.

In appposito siquidem schemate esto arcus BD 30. gr. & D C 60. distentq; puncta E & F utrimq; æqualiter à puncto D gr. scilicet 20. ut CE sit 40. FC verò 80. gr. Erit ergo FH Sinus arcus

arcus FC grad. 80. EG verò Sinus Rectus graduum 40. FI vel IE Sinus arcuum 20. grad. quibus gradibus nimirum FC arcus superat arcum DC , arcusq; EC ab eodem DC superatur. Sinus autem FH 80. jam notus est, uti & Sinus IF graduum 20. Quia ergò in Triangulo æquilatere FEL angulus FEL ejusque basis FL perpendicularo EK æquè biseccantur atq; angulus FLE ejusq; Basis FE perpendicularo LI , æquabuntur utiq; FI & FK . Quare subtracto FK Sinu 20. graduum à Sinu FH 80. grad. remanabit KH vel GE 40. graduum.



Erit ergò deinceps forma calculi talis:

Quærat Sinus $30^{\circ}. 0'. 1''0.$

Subtrahe à $60.$

Arcus minor $29.59.50.$ Sinus $49995802. S.$

Arcus major. $89.59.50.$ Sinus $100000000.$

Arcus $30^{\circ}. 0'. 1''.$ Quæsit Sinus $50004198.$

Aliud exempl:

Quærat Sinus $30^{\circ}. 0'. 2''0.$

60

$29.59.40.$ Sinus $49991603. S.$

$89.59.40.$ Sinus $100000000.$

Sinus $30^{\circ}. 0'. 2''0.$ quæsit $50008397.$

& sic deinceps.

Ita & si quærat:

Sinus

Sinus $59^{\circ}. 59'. 5''$.
60.

$\frac{0 \quad 0 \quad 10. \text{ Sin. } 4848. \text{ S.}}{60: \quad 0. \quad 10. \text{ Sin. } 86604964.}$

Sinus $59^{\circ}. 59'. 5''$. *quæsitus* 86600116.

Vcl:

Sinus $59^{\circ}. 59'. 4''$.
60.

$\frac{0 \quad 0. \quad 20. \text{ Sinus. } 9696. \text{ S.}}{60. \quad 0. \quad 20. \text{ Sinus. } 86607388.}$

Sinus $59^{\circ}. 59'. 4''$. *quæsitus*: 86597692.

&c.

Atq; hac ratione poterit quam citissimè, quàm accuratissimè intermedius etiam Canonis Triens, ipseque adeò totus Canon Sinuum confici vel ad singula secunda, exq; Sinu Toto quantocunq; assumto.

Cumq; meum propositum fuerit Canonis Logarithmorum potius, qui inusitator hactenus est altero, quàm Sinuum, structuram Lectori meo exhibere: conjeci in transitu ex optimis, qui ante Me in hac arenâ defudarunt, Autoribus, ea quæ huc facere videbantur in hunc ordinem: siquidem, quod quivis facile intelligit, absq; istis reliqua fuissent mutila.

Lector benevolus boni hoc consulat, & ad sequentia mecum accingatur.



LIBRI II.
TRIGONOMETRIÆ

SECTIO II.

De Constructione Tabulæ Logarithmorum.

CAPUT VI.

De

DISPOSITIONE TABULÆ LOGARITHMORUM, ejusq; partibus; deq; Logarithmis in genere.

Tabula Logarithmorum est minima omnium Tabularum fundamentalium Mathematicarum, cujus operâ facilimo calculo omnium Geometricarum dimensionum, motuumq; Cœlestium habetur notitia.

Sunt ipsissima quasi verba Illustris NEPERI, quæ consulto retineo, paucis non tam mutatis, quàm generalius positis. Certo enim certius est quod Neperus hypomnematis loco suæ Tabulæ Logarithmor. descriptioni subjungit, *tractatu de constructione Canonis Lugduni anno 1620. edito, pag. 5. posit. 1.* his verbis: *Hæc Tabula meritò minima dicitur, quia tabulam Sinuum volumine non superat: facilima, quia per eam omnes multiplicationes, divisiones, extractionesq; radicum graviores evitantur: solis enim & perpaucis facilimisq; additionibus, subtractionibus, & bipartitionibus (tripartitionibus etiam & quintupartitionibus) omnes generaliter figuras, motusq; metitur.*

Ea Tabula ab inventore Illustri Barone Scoto, JOANNE NEPERO Merchistonij Domino, ita adornata est, ut

est, ut vice Tabularum Tangentium & Secantium Veteris Canonis quàm optimè fungatur.

Quo respectu vel intuenti primum statim apparet, quàm Novus hic Canon veteri præstet, ut dubium nullum sit, quin, quæ NEPERUS hypomnemate superiori prædicavit de suo Canone, reapse ita se habeant. Sustulit NEPERUS fateor Tangentes & Secantes, ob quorum commoditatem rarissimè, in Triangulor. solutionibus, & Divisione & Multiplicatione numerorum magnor. simul opus erat. Quin potius videbatur insigne, uti & revera erat, compendium, *omnes quæstiones*, apud Clavium libr. 1. Astrolabij Lemm. 3. *quæ per Sinus, Tangentes & Secantes absolvi solent, per solam Prostaphæresin, id est, per solam additionem, subtractionemq; sine laboriosa numerorum multiplicatione, divisioneq; expedire*, atq; id per solos quidem Sinus, sive Tangentes sive Secantes vulgò in Trigonometricis in quæstionem veniant. Interim in nostro Canone hoc eadem omnia habentur; siquidem Logarithmi funguntur vice Secantium, Differentiales vice Tangentium: & præterea Radicum extractionibus nullis non liberaremur, si per ocium alicui liceret Canonem ad Sinum Totum 1000000000000000. vel 1000000000000000000000000. cōstruere: ad quod hacce hujus libri sectione lectorem omnibus necessarijs instruam, nec ullum calculi compendium, quo Ego usus fui, reticebo. Quin imò recipio in Me, modò Deus Vitam, Serenissimusq; Elector meus ocium hoc negociosissimum prorogare voluerint, ejusmodi Canonis, cujus fundamenta jam in Adversarijs habeo, editionem sedulò in Bonum publicum procuraturum.

Est enim Tabula Logarithmorum bipartita, alia Logarithmorū propriè sic dictorum, alia Differentialium. Quin & Logarithmorum Tabula alia (& constructio-

nis & aliorum Symptomatum ratione) est prioris semiquadrantis à 90° . ad 45° . alia semiquadrantis reliqui à 45° . ad 0° .

Logarithmi prioris semiquadrantis, quos dixi, sunt ij, qui in nostro Canone versus dextram in singulis paginis visuntur: uti econtra Logarithmi posterioris semiquadrantis ibidem dextri sunt. Illos in posterum dicemus *Logarithmos primæ seriei*, hos *secundæ*: ratio patebit ex ortu tam horum quam illorum.

Differentialium Tabula, intermedia est inter utriusque seriei Logarithmos.

Tam situs in Canone quam ortus respectu. Uti enim Logarithmi secundæ seriei ex Logarithmis primæ seriei oriuntur: ita Differentiales ex utrisque.

Logarithmus autem cujusque Sinus, est numerus quam proximè definiens lineam, quæ æqualiter crevit interea dum Sinus Totius linea proportionaliter in illum Sinum decrevit, existente utroque motu synchrono, atque initio æquive loce.

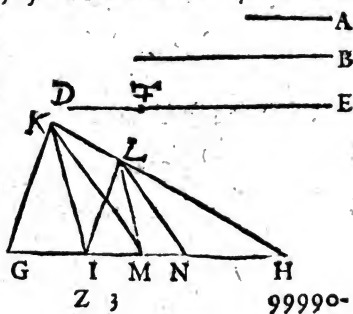
Ita Illustris NEPERUS Logarithmor. inventor eos definit *description. Canonis lib. 1. c. 1. definit. 6.* Et si autem hæc definitio propriè competit Logarithmis primæ seriei, utpote in quibus singula Definitionis hujus momenta satis evidentia sunt: nihil tamen obstat, quo minus sub hac Definitione reliqui etiam Logarithmi ex his nati comprehendantur. Operæ verò precium est, in singulas Definitionis partes, singulaque prope modum verba ut inspiciat is, qui Logarithmorum naturam exquisitè perspicere & cognoscere vult.

Atque principiò illud probè tenendum, Sinus esse lineas
Geome-

Geometricas Circulo inscriptas; Logarithmos verò numeros tantum non lineas. Hinc, cum lineæ in Circulo evidentius exhiberi queant, & demonstrari; Sinuum doctrina, eorumq; natura facilius comprehendendi potest: at Logarithmi, etsi ex Circulo oriuntur, quia tamen, ut Sinus, non adeò commodè Circulo adhiberi possunt, siquidem Numeri sunt, paulò difficili-ores initio videntur. Spero tamen ex seqq. omnia promittora futura & faciora. Deinde ex superioribus constat, quomodo ex Sinu Toto reliqui deducantur; ut nimirum à Sinu Toto reliqui arcuum Quadrâte seu 90. gradibus minorum Sinus decrescant, donec in initio Quadrantis Sinus Totus planè absumatur. Ex eodem Sinu Toto quomodocunq; assumpto oriuntur & Logarithmi, sed partu quasi præpostero; dum scilicet Sinus Totus vel Sinus 90. graduum, ex 100000000. inc. decrescit, accrescunt interea Logarithmi ex 0. in infinitum. Siquidem Sinus Totius 100000000. Logarithmus est 0.

Deniq; probè etiam discernenda est ratio decrementorum in Sinubus, & accrementorum in Logarithmis. Accrescunt interim Logarithmi ex 0. æqualiter, hoc est, Proportionē Arithmeticā, dum linea Sinus Totius, proportionaliter, hoc est, Proportionē Geometrica in illum Sinum decrescit. Ut clariùs omnia teneantur, *Esse in Schemate ult. cap. VII. lib. 1.*

p. 41. D E vel G H Sinus Totus partium 100000000. decrescat is proportionaliter, vel eà ratione quæ est lineæ A ad B, vel D F ad F E, hoc est, ut 10000. ad 100000000. sitq; G I 10000. I H autem (ob illud decrementum, quia scil. G H Sinus Totus jam decrevit in lineam I H)



99990000. Deinde & IH decreſcat ulterius eadem ratione ut 10000. ad 100000000. fietque MH 99980001. Ut enim 100000000. ad 99990000 : ita 99990000. ad 99980001. Tertio decreſcat & MH eadem ratione ut NH fiat 99970003. Nā ut 100000000. ad 99990000 : ita 99990000. ad 99980001 : & 99980001. ad 99970003. &c. Ita ergo tribus momentis, dum Sinus Totus 100000000. imminutus eſt in 99970003. Proportione Geometricā : interea Logarithmus, Arithmeticā Proportionem accrevit momentis iſdem, ut in appoſitā Tabella videre eſt, uſq; in 300001.

<i>Mom.</i>	<i>Sinus</i>			<i>Logarithmi.</i>	<i>Mom.</i>
	100000000.			0.	
1.	99990000.	Decrement.	Accrement.	10000.	1.
2.	99980001.			20001.	2.
3.	99970003.			30001.	3.
4.	99960006.			40002.	4.
5.	99950010.			50002.	5.
	&c.			&c.	

Melius tamen multò quàm hinc, apparebit deinceps utrobique; ratio accretionis & decretionis ex Tabulis Fundamentalibus Canonis. Interim vel ex hac etiam Tabella apparet, utrumque; motum eſſe initio æquivelocem. Antequam enim Logarithmus in 20000. accrevit, & Sinus Totus in 99980000. decrevit, hoc eſt, per totum Gradum Quadrantis ultimum, vel ex Canone, evidens eſt dicta illa æquivelocitas.

Omnis autem Logarithmus eſt aut Abundans aut Defectivus.

Logarithmi Abundantes omnes ſunt majores nihilo : reſpondentq; Sinibus Sinu Toto minoribus : præſiguntur.

giturq; ipsis aut litera L. aut signum abundantia⁺ aut signum omnino nullum.

Cum enim Sinus Totius 100000000. Logarithmus sit 0, erunt reliquorum omnium Sinuum, qui Sinu Toto sunt minores, Logarithmi Abundantes. Erunt ergo omnium Sinuum propriè sic dictorum Logarithmi Abundantes: quales etiam sunt Logarithmi nostri Canonis utriusq; seriei. Pari ratione, quia Profinus, vel Tangentes Semiquadrantis Circuli à 0°. ad 45°. sunt Sinu Toto minores, sunt & Differentiales nostri Canonis ijs Tangentibus correspondentes Abundantes, atq; ideo illis præfigitur signum Abundantiæ +.

Logarithmi Defectivi omnes sunt minores nihilo: respondentq; Sinibus Sinu Toto maioribus: præfigiturq; illis signum defectûs —.

Sinus autem Sinu Toto majores, sunt 1. Profinus vel Tangentes reliqui Semiquadrantis Circuli à 45°. ad 90°. usq;: ijs ergo iterum correspondent nostri Canonis Differentiales, sed cum signo Defectûs —. Deinde & Transinuosa^{sive} Secantes Canonis Veteris sunt Sinu Toto Majores: erunt ergo & Logarithmi ijs correspondentes nihilo minores sive Defectivi. Quare si Logarithmi utriusq; seriei fiant Defectivi, prænotato illis signo —, erunt Logarithmi primæ seriei loco Secantium primi Semiquadrantis à gr. 0. usq; ad 45°: Logarithmi autem secundæ seriei obtinebunt vicem Secantium reliqui Semiquadrantis à 45°. ad 90°.

CAPUT VII.

De

TERMINIS LOGARITHMICIS, EORUNDemq; Arithmetica.

Usitatum

U Sitatum est Mathematicis Quantitates ignotas, seu numero inexplicabiles, inter Terminos Numerales unitate vix differentes includere. Sic *Ludolfus à Ceulln libr. de Circulo & Adscriptis* posita Diametro Circuli partium 10000000000000000000. invenit ejusdem ambitum partium earundem 314159265358979323846. minorem justo & 314159265358979323847. justo majorem. Inter hos ergo Terminos inclusa est vera ambitus circuli ad Diametrum ejusdem ratio. Idem accidit Conditoribus Canonis Logarithmorum ut pro veris & genuinis Logarithmis, quos initio, dum ad Calculum accinguntur, ignorant, eorundem Terminis Logarithmicis utantur.

Verum Arithmetica Terminorum Logarithmicorum, quam ipsam constructionem adeamus, prius examissim tenenda: sciendumq; quomodo Termini Logarithmici addendi, subtrahendi, multiplicandi aut dividendi sint, prout opus fuerit.

Additio Terminorum Logarithmorum, fit, cum binos alicujus Logarithmi terminos cognitos, ad binos Terminos alterius addimus, ita ut minor illius, minori hujus; major illius, majori hujus addatur.

Ut:

123.5.	Terminus Major.	
123.2.	Minor.	
		Adde.
43.2.	Major.	
43.1.	Minor.	
<hr/>		
166.7.	Major.	
166.3.	Minor	Terminus summæ.

Subtractio fit, Terminum majorem minoris Logarithmi, à mi-

mi, à minore majoris; & minorem minoris à majore minoris auferendo. Ut:

166. 7. Terminus Major.

166. 3. Minor
S.

43. 2. Major.

43. 1. Minor.

123. 6. Major.

123. 1. Minor residui.

Rationem autem, cur, cum prius ex additione terminorum 123. 5. & 123. 2. ad Terminos 43. 2. & 43. 1. prodierint 166. 7. & 166. 3. Termini; nunc autem si ex terminis 166. 7. & 166. 3. subtraxeris Terminos 43. 2. & 43. 1. non remaneant Termini 123. 5. & 123. 2. sed 123. 6. & 123. 1. NEPERUS hanc *hoc in loco* tradit: quod, licet ex additione Terminorum 123. 5. & 123. 2. ad Terminos 43. 2. & 43. 1. prodeant Termini 166. 7. & 166. 3. *per antecedentia*; non sequatur tamen è converso, quin aliquid possit esse inter 166. 7. & 166. 3. ex quo si subtraxeris aliquid, quod sit inter 43. 2. & 43. 1. remaneat id, quod non sit inter 123. 5. & 123. 2: verum non esse id inter Terminos 123. 6. & 123. 1. esse impossibile. Eandem deinde rationem Lector etiam habeat in Divisione Terminorum.

Multiplicantur bini alicujus Logarithmi Termini per binos alterius, cum minor illius in minorem hujus, & major illius in majorem hujus ducitur. Ut:

10. 502. Major.

10. 500. Minor.

Multipl.

3. 216. Major.

3. 215. Minor.

33. 774432. Major.

33. 757500. Minor Facti.

Aa

Divi.

Divisio fit, partiendo Terminum majorem Dividendi per minorem Divisoris; & minorem Dividendi, per majorem Divisoris. Ut:

33.774432.	Major.
33.757500.	Minor.
	Divid.
3.216.	Major.
3.215.	Minor.
<hr/>	
10.506.	Major.
10.497.	Minor Quoti.

CAPUT VIII.

De

PRIMÆ TABULÆ MEDIATRICIS
construptione.

Tabulæ Logarithmorum constructio dependet aliunde, nimirum ex Tabulâ Radicali, quam NEPERUS vocat.

Accurata Tabulæ Radicalis constructio & ipsa nititur alijs duabus Tabulis, quas Ego voco, ob insignem earum utilitatem, & alia, quæ ad Radicalis perfectionem conferunt, Tabulas Mediatrices.

Atq; ut utraq; Mediatricum eò spectat, ut Primus Tabulæ Radicalis Logarithmus sit accuratus: ita Primæ Mediatricis officium est Secundæ Primum Logarithmum elaborare.

Utraq; Medatrix est trium Columnarum: quarum Prima continet præter Sinum Totum centum numeros, ex-

ros, exprimentes Sinus Proportionaliter decrescen-
tes, progredientesq; in ea proportione, quæ est inter
Sinum Totum 100000000. & Sinum eo minorem
unitate.

Hujus Constructio dependet ex Proportione : ut
1 00000000. 00000000. ad 99999999. 00000000.
ita 99999999. 00000000. ad Ignotum. Et ut
99999999. 00000000. ad Ignotum primum, ita I-
gnotus Primus ad Ignotum secundum : & sic deinceps.

Quia autem difficile fuerit per Regulæ Proportionum,
Multiplicationes & Divisiones tædiosas centum ejusmodi Nu-
meros Proportionales investigare, velim Lectorem Meum ad-
fuescere ad sequentem saltem subtractionem, quæ idem absq;
insigni labore præstiterit.

100000000.00000000.	
1.00000000.	S.
99999999.00000000.	
99999999.	S.
99999999.00000001.	
99999998.	S.
99999997.00000003.	
99999997.	S.
99999996.00000006.	

&c. donec ultimus, & quidem, præter Sinum To-
tum, Centesimus Proportionalis prodeat.

99999900.00004950.

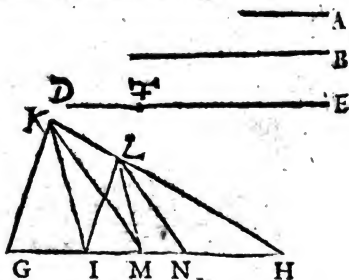
Secunda columna continet singulorum Sinuum colu-
mnæ Primæ Terminos Logarithmicos : adeoq; nu-
meros

meros ducentos, quorum bini semper singulis Sinibus collateralibus respondent:

De inventione Logarithmi cujusvis Sinus dati teneatur sequens Regula:

REGULA. Cujuslibet dati Sinus Logarithmus major est differentiâ inter Sinum Totum & Sinum datum: Et minor Differentiâ, quæ est inter Sinum Totum & numerum eo majorem in eâdem ratione quæ est Sinus Totius ad datum.

In Schemate ultimo *Cap. 7. L. 1.* Esto *MH* Sinus datus, *IH* Sinus Totus, *GI* Additamentum ad Sinum Totum in ratione data, ut nempe *GH* se habeat ad *IH* ut *IH* ad *MH*. Dico Sinus *MH* Logarithmum *DF* majorem esse quàm *IM* & minorem quam *GI*. Quanto enim tempore *G* ad *I* fertur, tanto & *I* in *M* feretur per naturam Logarithmorum, quia *GI* est tanta pars Lineæ *GH* quanta *IM* est lineæ *IH*, tantoq; tempore per Definitionem Logarithmi feretur & *D* ad *F*: Ita ut *GI* *IM* & *DF* sint æqualium temporum processus. At quia motus inter *G* & *I* velocior est quam inter *I* & *M*, in *I* autem motus æquè velox est atq; inter *D* & *F* sequetur processum *GI* quem *G* ad *I* motus velox facit majorem esse: & *IM* processum quem *I* ad *M* motus tardus facit, minorem esse, & *DF* processum (quem *D* ad *F* mediocri suo motu totidem etiam temporis momentis perficit) medium quoddam esse inter utrumq;



trumq; quod erat demonstrandum. Logarithmū igitur, quem DF designat, dicitur GI terminus major & IM terminus minor. *Neperus tr. de Constr: Can: positione 28. p. 14. 15.* Hinc

Dati Sinus terminos Logarithmicos invenimus processu sequenti:

Sinum datum subtrahimus à Sinu toto & relinquitur Terminus Minor: terminum minorem autem ducimus in Sinum Totum & productum dividimus per Sinum datum, proditq; Terminus Major.

Quærendi sint Termini Logarithmici Primi Proportionalis Numeri in Tabulâ Primâ Mediatrice, nimirum Sinus 99999999.00000000.

Pro Termino Minore.

Sin. T. 100000000.00000000.

Sin. dat. 99999999.00000000. S.

1.00000000. Termin. Minor.

Pro Termino Majore.

Sin. T. 100000000.00000000.

Term. min. 1.00000000. M.

Factus 100000000.00000000.00000000.

Sin. dat. 99999999. 00000000. divid.

1.00000000.1 Term. Maj. quæf.

Quod si autem majorem accuratorem requiris, erit

Terminus Minor 1.00000000.00000000.

Major 1.000000001.00000001.

Nobis sufficiat pro nostro instituto Terminus

Minor 1.00000000.0.

Major 1.000000001.0.

Uti & calculo planè eodem erunt pro Secundo Proportionali Numero sive Sinu, Termini

Aa 3

Minor

Minor 2.00000000.0.

Major 2.000000002.0.

Quia verò radiosum esset, reliquor. 98. Sinuum nostræ Tabulæ correspondentes Terminos Logarithmicos, per multiplicationis & divisionis fastidia, investigare: è primi autem & secundi Proportionalis Terminis Logarithmicis reliquorum Arithmetica proportio in proclivi est: promptissima erit reliquorum Terminorum Logarithmicorum singulis Sinibus debitorum ex his bis binis deductio ad hoc exemplum:

<i>Sinus.</i>	<i>Termini Logarithmici.</i>
100000000 00000000.	0.
99999999.00000000.	1.00000000.0.
	1.000000001.0.
99999998.000000001.	2.00000000.0.
	2.000000002.0.
99999997.000000003.	3.00000000.0.
	3.000000003.0.
99999996.000000006.	4.00000000.0.
	4.000000004.0.
<i>Ec.</i>	<i>Ec.</i>

Tertia Columna est Logarithmorum, cuilibet Proportionali numero sive Sinui collateralis correspondentium, eq; Terminis hactenus inventis deductorum. Logarithmorum autem illorum ortus est, ex Terminis suis Logarithmicis, quorum semidifferentia Minori addita Terminò, vel à Majori subducta exhibet Logarithmum quæsitum. Sic:

Quia Primi, hujus Mediatricis, Proportionalis Sinus, Termini sunt ex antecedentibus.

Minor

Minor	1.00000000.0.	
Major	1.00000001.0.	Subtr.
Differ.	1.0.	
Semidifferentia	5.	erit

Logarithm. 1.00000000.5. Proportionalis, h. e. Sinus
99999999.00000000. quæsitus.

Hinc, cum Sinnum Primæ hujus Mediæ, uti & secundæ, & Radicalis decrements Proportionis sint Geometricæ: accrements autem Logarithmorum (*ex definit. Logarithm.*) sint Proportionis Arithmeticæ: quemadmodum Proportionalis Primi nimirum 99999999.00000000. Logarithmus est 1.00000000.5: ita secundi Proportionalis 99999998.00000001. Logarithmus erit 2.00000001.0. & tertij, nimirum 99999997.00000003. L. 3. 00000001.5. facile erit Primam Mediatrixem ita continuare, ut videre est, in Tabulâ sequenti.

	Sinus Proportionales.	Termini Log.	Logarithmi
	1.00000000.00000000.	0.	0.
1.	99999999.00000000.	1.00000000.0. 1.00000001.0.	1.00000000.5.
2.	99999998.00000001.	2.00000000.0. 2.00000002.0.	2.00000001.0.
3.	99999997.00000003.	3.00000000.0. 3.00000003.0.	3.00000001.5.
4.	99999996.00000006.	4.00000000.0. 4.00000004.0.	4.00000002.0.
	<i>Ec.</i> <i>usq; ad</i>	<i>Ec.</i> <i>usq; ad</i>	<i>Ec.</i> <i>usq; ad</i>
100.	99999900.00004950.	100.00000000.0. 100.00000100.0.	100.00000050.0.

CAPUT IX.

De

SECUNDÆ TABULÆ MEDIATRICES constructione.

Mediatrix Secunda formæ & dispositionis nomine à primâ nihil differt : proportio tamen Sinuum decreſcentium primæ columnæ ; Terminorumq; Logarithmicorum, & per conſequens ipſorum Logarithmorum inventio eſt paulò alia à priori.

Prima enim Columna iterum, præter Sinum Totum continet centum numeros exprimentes Sinus Proportionaliter decreſcentes, progredientesq; in eâ Proportionem, quæ eſt inter Sinum Totum, & numerum eo minorem centenarium, utpote inter 100000000. & 99999900.

Inventio omnium Terminorum eſt ſeriei & calculi ſequentis:

100000000.	00000000.
100	00000000.
99999900.	00000000.
99	99990000.
99999800.	00010000.
99	99980000.
99999700.	00030000.
99	99970000.
99999600.	00060000.

&c. donec ultimus, & quidem, præter Sinum Totum, Centesimus Proportionalis prodeat.

99990000. 49498381.

Pro

Pro primi autem Proportionalis tam Terminis Logarithmicis, quam consequenter Logarithmis inveniendis (continuatio enim eorundem est eadem quæ in priori Mediatrice) observentur sequentia duo Problemata, quibus & insequentibus opus habebimus.

I. Quomodo inter Logarithmos duorum datorum Sinuum Termini differentia inveniri debeant.

REGULA. Dueto Sinu Toto in differentiam datorum Sinuum, oriatur ex Facto diviso per minorem Sinuum datorum, Major Terminus : & ex eodem Facto diviso per majorem Sinum, Minor Terminus.

RATIO REGULÆ. Sinus enim minor se habet ad differentiam Sinuum, ut Sinus Totus ad majorem Terminum differentia Logarithmorum : & Sinus Major ad differentiam Sinuum, ut Sinus Totus ad minorem Terminum.

Demonstrationem hujus vide apud Neperum (*exempl. Lugdun. de Construct. Canon posit. 39. Pag. 19.* quam ideo huc non adscribo, ne videar eum librum ex Legentium manibus excussisse.

Exempla hujus Praxeos occurrent in seqq:

II. Quomodo Sinuum non in ipsos Proportionales Primæ Mediatricis, sed prope vel inter eos cadentium, Logarithmos, eorumve saltem Terminos insensibili differentia distantes exhibendi sint.

REGULA. Sinui dato Sinum Primæ Mediatricis proximum sive minorem, sive majorem nota, una cum ejusdem Terminis Logarithmicis, quos asserva. Deinde Terminos differentia inter Logarithmos Sinus dati & Sinus Tabulati quære, eosq; ad reservatos il-

Bb

los ad-

los adde, aut ab ijdem subtrahe, prout Sinus datus major aut minor fuerit tabulato ei proximo. Numeri qui hinc producuntur erunt Termini propinqui, inter quos includetur Logarithmus Sinus dati.

Exemplum.

Quærendi sint Termini Logarithmici Primi Proportionalis Numeri in Tabula secundâ Mediatrice, nimirum Sinus 99999900. 00000000.

Sinus datus	99999900. 00000000.
Sinus Mediatr. l. prox.	99999900. 00004950.
	Differentia 4950.
Sinus Tabulati termini Minor	100. 00000000.
	Major 100. 00000100.
Differentia Sinuum	4950.
Sinus Totus	100000000. 00000000. M.
Factum	495000000000. 00000000.
Sinus major.	999999000000 0495 0. D.
Quotus	4950. Terminus quæf. minor.

Eodem Differ. 4950.

Sinus T.	100000000. 00000000. M.
Factum:	495000000000. 00000000.
Sinus min.	999999 00. 00000000. D.
Quotus	4950. Terminus quæf. major.
Terminorum reservator. Minor	100. 00000000.
	Major. 100. 00000100.

A.

Termin. invent. Minor & Major	4950.
Term. l. Proport. quæf. Minor	100. 00004950.
	Major. 100. 00005050.

Differ.

Differ.

100.

Semidiff.

50.

Logarithmus B. Proport. quæsit. 100. 00005000.

Hinc, uti & Capite proximo, reliqua omnia deducuntur, ipsaq; adeò Mediatrix secūda perficitur ad Exemplum sequens.

	<i>Sinus Proportionales.</i>	<i>Termini Log.</i>	<i>Logarithmi</i>
	100000000. 00000000.	0.	0.
1.	99999900. 00000000.	100. 00004950. 100. 00005050.	100. 00005000.
2.	99999800. 00010000.	200. 00009900. 200. 00010100.	200. 00010000.
3.	99999700. 00030000.	300. 00014850. 300. 00015150.	300. 00015000.
4.	99999600. 00060000.	400. 00019800. 400. 00020200.	400. 00020000.
	<i>Ec.</i> <i>u/2 ad</i>	<i>Ec.</i> <i>u/2 ad</i>	<i>Ec.</i> <i>u/2 ad</i>
100.	99990000. 49498389.	10000. 00495000. 10000. 00505000.	10000. 00500000.

CAPUT X.

De

CONSTRUCTIONE TABULÆ

Radicalis.

Tabula Radicalis à Mediatrixibus, quas hætenus vidimus, est diversissima.

Habet enim Columnas triginta quinq; quarum unaquæq; præter primum, ut in Mediatrixibus, continent 100. Proportionales (progredientes in eâ pro-

Bb 2

portu-

portione, quæ est 1000. ad numerum eo minorem unitate, videlicet 100000000. ad 99990000.) una cum Logarithmis, ijs singulis à latere correspondentibus.

Triginta autem quinque primi inter se, aut secundi aut tertij, aut ceteri ejusdem ordinis omnium Columnarum progrediuntur eâ proportionem, quæ est 100. ad 99. aut Sinus Totius 100000000. ad 99000000.

Primi ergo cujusque Columnæ proportionales tales sunt ut sequitur:

1.	100000000. 0.
2.	99000000. 0.
3.	98010000. 0.
4.	97029900. 0.
5.	96059601. 0.
6.	95099005. 0.
7.	94148114. 9.

&c.

usque ad

35. 71055322. 7.

Primæ verò Columnæ Proportionales ita progrediuntur:

	100000000. 0.
1.	99990000. 0.
2.	99980001. 0.
3.	99970003. 0.
4.	99960006. 0.
5.	99950010. 0.

&c.

usque ad

100. 99004933. 9.

Reliqua

Reliqua deinde, ubi in cognitionem Logarithmorum etiam pervenerimus, ostendentur.

Nunc id agendum, ut duorum Proportionalium, qui ex omnibus maximè sunt primarij, & quorum causa Mediatricum Tabellæ sunt inventæ, Logarithmos, ex quibus, tanquam ex perennibus fontibus, reliqui omnes, totusq; adeò Canon Logarithmorum deducitur, investigemus. Sunt autem ij, Primus Proportionalis Primæ Columnæ in Tabula Radicali 99990000. 00000000. & Primus Numerus Columnæ in eadem Radicali secundæ 99000000. 00000000.

I. Pro Sinûs 99990000. 00000000. Logarithmo.

REGULA. Sinui dato Sinum secundæ Tabulæ proximum, sive majorem sive minorem, ejusq; Terminos Logarithmicos nota & asserva, ut in II. Probl. Cap. proxime antecedent. factum. Deinde, per regulam Proportionis, quære quartum Proportionale, habens se ad Sinum Totum: ut Sinuum dati & Tabulati minor se habet ad majorem: quod commodissimè ita perficies. Duc Sinuum dati & Tabulati Differentiam in Sinum Totum, productumq; divide per dati & Tabulati majorem, quotumq; à Sinu Toto subtrahe: quod remanet est Quartum Proportionale quæsitum, cujus Terminos Logarithmicos per Probl. II. Cap. prox. iterum quære, inventosque ad Terminos Logarithmicos Tabulati adde, aut ab iisdem subtrahe, prout Tabulatus Sinus major minorvè fuerit dato, & producentur Termini Logarithmici Sinus dati.

Sinus datus 99990000. 00000000.

Sin. Tabulatus H^r. 99990000. 49498389.

Differentia. 49498389.

Termini Logarithmici Sinus Tabulati:

Minor 10000. 00495000.

Major 10000. 00505000.

Diff. Sin. in S. T. mult: 49498389. 00000000. 00000000.

Sinus Tabulat. 99990000. 49498389. D.

Quotus 49503339. S.

Sin. T. 100000000. 00000000.

99999999. 50496661. Quantum Proportionale,

99999999. 00000000. Tabulatus I^r. Mediatr,

Differ: 50496661.

Termini Logarithmici Proximi Tabulati:

Minor 1. 00000000. 0.

Major 1. 00000000. 1. 0.

Diff. Sin. in S. T. mult: 50496661. 00000000. 00000000.

Sin. Major 99999999. 50496661. D.

Quotus 50496661. 3. Terminus Minor.

Idem Factus 50496661. 00000000. 00000000.

Sinus Minor 99999999. 00000000. D.

Quotus 50496661. 5. Terminus Major.

Terminor. inventor. Minor 50496661. 3.

Major 50496661. 5.

S.

E proximè super. Minor 1. 00000000. 0.

Minor 1. 00000000. 1. 0.

Minor 49503338. 5.

Major 49503339. 7.

Vd:

Vel:

Minor 4950333.9.

Major 49503340.

Terminor. reliquor.

A.

Minor 10000.00495000.

Major 10000.00505000.

Minor 10000.49998339.

Major 10000.50008340.

Atq; hi sunt Termini Logarithmici Sinus dati, vel Primi Proportionalis Primæ Columnæ in Tabula Radicali, hoc est, Sinus 99990000.00000000. quæsit, inter quos ejusdem Sinus Logarithmus intercluditur

Minor 10000.49998339. S.

Major 10000.50008340.

Differ. 10001.

Semidiffer. 5000.5.

Logarithmus 10000.50003339.5. quæsitus.

Hic autem insuper est ille Logarithmus, quo Logarithmi omnium Columnarum Tabulæ Radicalis accrescunt. Erit itaq; ex his, quæ jam dicta sunt, Primæ Columnæ ejusdem Tabulæ Radicalis hæc facies:

PRIMA COLUMNA.

	SINUS.	LOGARITHMI.
	100000000.0.	0.
1.	99990000.0.	10000.5.
2.	99980001.0.	20001.0.
3.	99970003.0.	30001.5.
4.	99960006.0.	40002.0.
	&c. usq; ad	&c. usq; ad
100.	99004933.9.	1000050.0.

II. Pro

II. Pro Sinus 99000000.00000000. Logarithmo.

Processus idem est, qui proximus, nisi quod Quartum Proportionale geminum hic queritur, uti ex Calculo apparebit,

Sinus datus 99000000.00000000.

Tabular. 12. Col: 99004933.86913712.

Hujus Terminum Logarithmici

Minor 1000049.99833850.

Major 1000050.00833970.

Diff. Sin. 4933.86913712.

Sin. T. 100000000.00000000. M.

Factus 4933.86913712.00000000.00000000.

Sin. Tabul: 99004933.86913712.

Quotus 4983.45783821.4.

Sin. Tot. 100000000.00000000.

Quotus prior. 4983.45783821. S.

99995016.54216179. Quartum Proportionale Primum.

IVm. Proport. 99995016.54216179.

Sin. II. Mediatr. 99995000.12249804. S.

Different. 16.41966375.

Sinus Tabulati Terminum Logarithmici.

Minor 5000.00247500.

Major 5000.00252500.

Different. Sin. 16.41966375.

Sin. T. 100000000.00000000. M.

Factus 16.41966375.00000000.00000000.

Sinus Major 99995000.12249804.

Quotus 16.42048206.

Sinus

Sinus Totus 100000000.00000000.

Quotus Prior 16.42048206. S.

Proport. Quart. 99999983.57951794.

S. Tab. Iz. Med. 99999983.00000136. S.

Differ. 57951658.

Sinus Tabulati Termini Logarithmici.

Minor 17.00000000.

Major 17.00000017.

Diff. Sinuū in Sin. T. ducta 57951658.00000000.00000000.

Sinus Maj. 9999998357951794. D.

Quotus 57951667.5. Terminus Minor.

Factus Prior 57951658.00000000.00000000.

Sin. Min. 9999998300000136. D.

Quotus 57951667.5. Terminus Major.

Collectio Terminor. omnium in unam Summam.

Terminor. inventorum Minor 57951667.5.

Major 57951667.9.

S.

Termin. & II. Mediatrice Minor 17.00000000.0.

Major 17.00000017.0.

Minor 16.42048332.4.

Major 16.42048349.8.

S.

Term. & II. Mediatr. Minor 5000.00247500.

Major 5000.00252500.

Minor 4983.58199151.

Major 4983.58204168.

A.

Term. & I. Col. Minor 1000049.99833850.

Major 1000050.00833970.

Minor 1005033.58033001.

Major 1005033.59038138.

Cc

Hi sunt

Hi sunt Logarithmici Termini Sinus Primi Columnæ secundæ, nimirum Sinus 99000000. 00000000. estq; eorum differentia 1005137. Semidifferentia 502568. 5. quæ addita ad minorem Terminum, vel subtracta à majori procreat Logarithmum 1005033. 5854570. quo Logarithmo ejusdem ordinis Sinuum Logarithmi in omnibus Columnis accrescunt.

Hinc ergo Lectori Ideam quandam Totius Tabulæ Radicalis fito.

Columna II.		Columna III.	
SINUS.	LOGARITHMI.	SINUS.	LOGARITHMI.
99000000.0	1005033.6	98010000.0	2010067.2
98990100.0	1015034.1	98000199.0	2020067.7
Uc. usq; ad		Uc. usq; ad	
98014884.5	2005083.6	97034735.7	3010117.2
Columna IV.		Columna V.	
SINUS.	LOGARITHMI.	SINUS.	LOGARITHMI.
97029900.0	3015100.8	96059601.0	4020134.3
97020197.0	3025101.3	96049995.0	4030134.8
Uc. usq; ad		Uc. usq; ad	
96064388.3	4015150.8	95103744.4	5020184.3
Columna VI.		Columna VII.	
SINUS.	LOGARITHMI.	SINUS.	LOGARITHMI.
95099005.0	5025167.9	94148014.9	6030201.5
95089495.1	5035168.4	94138600.1	6040202.0
Uc. usq; ad		Uc. usq; ad	
94152707.0	6025217.9	93211179.9	7030251.5
		Columna VIII.	

Columna VIII.

SINUS.	LOGARITHMI.
93206534.8	7035235.1
93197214.1	7045235.6
<i>Ec. usq; ad</i>	
92279068.1	8035285.1

Columna X.

SINUS.	LOGARITHMI.
91351724.7	9045302.3
91342589.6	9055302.8
<i>Ec. usq; ad</i>	
90442714.7	10045352.3

Columna XII.

SINUS.	LOGARITHMI.
89533825.4	11055369.4
89524872.0	11065369.9
<i>Ec. usq; ad</i>	
88642904.6	12055419.4

Columna XIV.

SINUS.	LOGARITHMI.
87752102.3	13065436.6
87743327.1	13075437.1
<i>Ec. usq; ad</i>	
86878910.8	14065486.1

Columna IX.

SINUS.	LOGARITHMI.
92274469.4	8040268.7
92265242.0	8050269.2
<i>Ec. usq; ad</i>	
91356277.5	9040318.7

Columna XI.

SINUS.	LOGARITHMI.
90438207.5	10050335.8
90429163.7	10060336.3
<i>Ec. usq; ad</i>	
89538287.5	11050385.8

Columna XIII.

SINUS.	LOGARITHMI.
88638487.2	12060403.0
88629623.3	12070403.5
<i>Ec. usq; ad</i>	
87756475.6	13060453.0

Columna XV.

SINUS.	LOGARITHMI.
86874581.3	14070470.2
86865893.8	14080470.7
<i>Ec. usq; ad</i>	
86010111.7	15070510.2

Cc 2

Columna

Columna XVI.

SINUS.	LOGARITHMI.
86005835.5	15075503.8
85997234.9	15085504.3
<i>Ec. u/g₂</i> ad	
85150020.5	16075553.8

Columna XVIII.

SINUS.	LOGARITHMI.
84294319.3	17085570.9
84285890.0	17095571.4
<i>Ec. u/g₂</i> ad	
83455535.1	18085620.9

Columna XX.

SINUS.	LOGARITHMI.
82616862.4	19095638.1
82608600.7	19105638.6
<i>Ec. u/g₂</i> ad	
81794770.0	20095688.1

Columna XXII.

SINUS.	LOGARITHMI.
80972786.8	21105705.3
80964689.5	21115705.8
<i>Ec. u/g₂</i> ad	
80167054.0	22105755.3

Columna XVII.

SINUS.	LOGARITHMI.
85145777.1	16080537.4
85137262.5	16090537.9
<i>Ec. u/g₂</i> ad	
84298520.3	17080587.4

Columna XIX.

SINUS.	LOGARITHMI.
83451376.1	18090604.5
83443031.0	18100605.0
<i>Ec. u/g₂</i> ad	
82620979.8	19090654.5

Columna XXI.

SINUS.	LOGARITHMI.
81790693.8	20100671.7
81782514.7	20110672.2
<i>Ec. u/g₂</i> ad	
80976822.3	21100721.2

Columna XXIII.

SINUS.	LOGARITHMI.
80163058.9	22110738.9
80155042.6	22120739.4
<i>Ec. u/g₂</i> ad	
79365383.5	23110788.9

Columna

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Columna XXIV.

SINUS.	LOGARITHMI.
79361428.4	23115772.5
79353492.2	23125773.0
<i>Ec. usq; ad</i>	
78571730.0	24115812.5

Columna XXVI.

SINUS.	LOGARITHMI.
77782135.9	25125839.6
77774357.7	25135840.1
<i>Ec. usq; ad</i>	
77008152.2	26125889.6

Columna XXVIII.

SINUS.	LOGARITHMI.
76234271.4	27135906.8
76226648.0	27145907.3
<i>Ec. usq; ad</i>	
75475690.0	28135956.8

Columna XXX.

SINUS.	LOGARITHMI.
74717209.4	29145974.0
74709737.7	29155974.5
<i>Ec. usq; ad</i>	
73973723.8	30146024.0

Columna XXV.

SINUS.	LOGARITHMI.
78567814.1	24120806.1
78559957.3	24130806.1
<i>Ec. usq; ad</i>	
77786012.4	25120856.1

Columna XXVII.

SINUS.	LOGARITHMI.
77004314.6	26130873.1
76996614.1	26140873.1
<i>Ec. usq; ad</i>	
76238070.7	27130923.2

Columna XXIX.

SINUS.	LOGARITHMI.
75471928.7	28140940.4
75464381.5	28150940.9
<i>Ec. usq; ad</i>	
74720933.1	29140990.4

Columna XXXI.

SINUS.	LOGARITHMI.
73970037.3	30151007.6
73962640.3	30161008.1
<i>Ec. usq; ad</i>	
73233986.5	31151057.6

Ec. 3

Columna

Columna XXXII.		Columna XXXIII	
SINUS.	LOGARITHMI.	SINUS.	LOGARITHMI.
73230337.0	31156041.1	72498033.6	32161074.7
73223013.9	31166041.6	72490783.8	33171075.2
<i>Ec. usq; ad</i>		<i>Ec. usq; ad</i>	
72501646.7	32156091.1	71776630.2	33161124.7
Columna XXXIV.		Columna XXXV.	
SINUS.	LOGARITHMI.	SINUS.	LOGARITHMI.
71773053.3	33166108.3	71055322.7	34171141.9
71765876.0	33176108.9	71048217.2	34181142.4
<i>Ec. usq; ad</i>		<i>Ec. usq; ad</i>	
71058863.9	34166158.3	70348275.3	35171191.9

CAPUT XI.

De

LOGARITHMORUM PRIMÆ

seriei inventionis.

RAdicali Tabulâ absolutâ, inq; eâ primis Logarithmis exquiritè constitutis : pergendum jam est ad ipsius Tabulæ Logarithmorum ex eâ deductione. Primariò autem Logarithmi primæ seriei ex eâ derivantur : reliqui ex his.

Atq; initio quidem Primæ seriei Logarithmi in Canone sunt suorum Sinuum ad Sinum Totum Complementa, tam diu donec Sinus Totus in 99990000. decreverit : ideoq; inscriptio eorum Sinuum facilima est, sic:

Loga-

Logarithmi.	Sinus.	//
0	100000000.	60.
0	100000000.	50.
0	100000000.	40.
1	99999999.	30.
2	99999998.	20.
3	99999997.	10.
4	99999996.	0. 59.
6	99999994.	50.
8	99999992.	40.
10	99999990.	30.
12	99999988.	20.
14	99999986.	10.
17	99999983.	0. 58.
	<i>Uc. usq;</i> <i>ad</i>	
9346	99990654.	0. 13.
9412	99990588.	50.
9479	99990521.	40.
9546	99990454.	30.
9613	99990387.	20.
9680	99990320.	10.
9748	99990252.	0. 12. 89.

Reliquorum Sinuum totius primæ seriei Logarithmi intra limites Tabulæ Radicalis comprehenduntur, indeq; eruuntur solius Regulæ Proportionum ope, processu sequenti:

Quærendus sit Logarithmus correspondens Sinui $81^{\circ}. 53.$
 $1^{\circ} 0.$ qui est 98999631. Hunc Sinum quæro in Radicali, eumq;
 nulli-

nullibi quidem exactè reperio: in Columna tamen secundà invenio duos, quorum unus est dato minor, alter major. Eos ergo, uti & Logarithmos ijs correspondentes excerpo, & tam Sinuum quam Logarithmorum Differentias noto. Deinde & majoris Tabulati & dati differentiam quæro, illasq; tres ita repertas Differentias dispono juxta mentem Regulæ Proportionum, ita ut Differentia Tabulator. Sinuum primum, Logarithmorum secundum, reliqua tertium occupet. Calculo, uti decet, instituto, addo tandem id, quod quarto loco prodit ad Logarithmum majoris Tabulati.

	Sinus.	Logarithm.	
Tabul. Maj.	99000000.	1005034.	99000000.
Min.	98990100.	1015034.	98999631.
Diff.	9900	10000	369.

100

36909.

36900	
99	3
297	
720	
693	7
2702	

1005034.

372. A.

1005406.

Log. quæsitus.

Sic si Sinus 88204759. Logarithmus quæri debeat: procedet calculus ex Columna XII. ita:

	Sinus.	Logarithmi.	
Tabul. Maj.	88302283.	12440422.	88302283.
Min.	88293453.	12450422.	88294759.
	8830	10000	7524.

75240-

	7524000	8
	883	
	7064	
	4600	5
	4415	
	1850	2
	1766	
	840	1
12448943	Logarithmus	
8521	quæsitus.	

Hac ratione tota prima series Logarithmorum usq; ad 45° . compleri potest faciliè & expeditissimè: quamvis non opus esse ducam, ut singulorum Sinuum à 90° . ad 45° . Logarithmi ita quærantur: quin potius sufficere puto, si ad singulorum minutorum Sinus Logarithmi quærantur, intermedij q; (uti *supra* de Sinibus dictum) beneficio differentiarum primar. secundar. &c. quærantur.

CAPUT XII.

De

LOGARITHMORUM SECUNDÆ SERIEI inventione.

Inventis Logarithmīs omnium arcuum 45° . majorum, omnium arcuum minorum, hoc est, secundæ seriei Logarithmi, faciliè habentur Regulā sequenti:

REGULA. Datum arcum, cujus Sinum quæris, duplica & ad dupli Logarithmum, adde Logarithmum 69314718. dimidij Sinus totius (videlicet Logarithmum Sinūs arcūs 30° .) ab aggregato autem

Dd subtra-

Subtrahe Logarithmum complementi dati arcus;
remanebitq; Logarithmus dati arcus quæsitus.

RATIO REGULÆ. Quia enim, ut dimidium Sinus Totius se habet ad Sinum dimidij alicujus arcus : ita Sinus complementi ejusdem dimidij, ad Sinum totius arcus : uti demonstrat *Neperus tr. de construct. Canon. p. 30. posit. 55* : additis extremorum datorum Logarithmis, nimirum Logarithmo dupli arcus & Logarithmo dimidij Sinus Totius, æq; summâ subtracto Logarithmo Sinus Complementi arcus dimidij, remanebit Logarithmus ipsius dimidij (vel potius dati) arcus. Cur autem, cum in Sinuum Proportionibus divisiones & multiplicationes adhibeantur, in Logarithmorum tractatione in locum Divisionum Subtractiones, in Multiplicationum locum Additiones succedant : id è naturâ Logarithmorum oritur, ultimoq; hujus libri capite ejusmodi operationum compendiosarum exempla, & uberiores declarationes proponentur.

Exempla.

Quærat^r Logarithm. 44° .

Duplum 88. L. 60936.

Logarithm. dimid. S. Totius 69314718. A.

aggr. 69375654.

Compl. dati arc. 46° . L. 32942143. S.

Logarithmus dati arcus 44° . 36433511.

Aliud.

Quærat^r L. 43° .

dupl. 86. L. 243892.

L. 69314718. A.

L. 69558610.

47° . L. 31285808.

L. 38272802.

Aliud

*Aliud.*Quærat^r L. 42°.

dupl. 84. L. 549316.

L. 69314718. A.

L. 69864034.

48° L. 29686433.

L. 40177601.

Idem processus teneatur in omnibus alijs, donec & Logarithmi seriei secundæ fuerint absoluti.

CAPUT XIII.

De

DIFFERENTIALIUM INVENTIONE.

INventis utriusq; seriei Logarithmis : nihil amplius ad Canonis absolutam perfectionem restat, quam columnæ mediæ, quam Differentialium diximus, adimplerem.

Ea absolvitur per solam Subtractionem.

Quemcunq; enim Differentialem velis, subtrahe Logarithmum ejus lineæ dextrum vel seriei primæ, à Logarithmo sinistro, seu seriei secundæ, & remanebit Differentialis quæsitus. Ut:

Quærat^r Differentialis 42°. vel 48°.

Logarithmorum circumpositorum.

Sinister 40177601.

Dexter 29686433. S.

Differentialis quæsit. 10491168.

D d 2

Aliud

Aliud pro $28^{\circ}.3'0.$

L. Sinister 73990601.

L. Dexter 12917846.

Different. quæf. 61072755.
& sic deinceps.

Habet itaq; Lector omnia necessaria præcepta & subsidia ad constructionem Canonis Logarithmorum, cujus constructionis, ut summa est facilitas, ita non dubito, quin neminem non, sub ipsis principijs, invitatura sit ad ipsius Trigonometriz multò promptiorem & expeditiorem calculum, de quo non minus verè id testari possum, quod *Neperus de suâ Rhabdologiâ*:

Quæ terrere solent ab amore Mathesios, illa
Hoc parvo cernes esse remota libro.



LIBRI II.
TRIGONOMETRIÆ,

SECTIO III.

De usu Canonis Logarithmorum
in genere.

CAPUT XIV.

De

ANGULORUM VEL ARCUUM, SINUUM
& Logarithmorum reciprocis & mutuis
excerptionibus.

Proteram, Canone absoluto, continuò ipsam Trigonometriam, quam *tertio libro* docturus sum, adire : nisi tria essent, quæ me detinent in secundo libro diutius.

Primum & secundum, uti ab experientia habeo, Tironibus difficilia videntur, sæpiusq; eos aut ab ipso studio abarcent, aut certè turbant & morantur. Illud est, quod in Titulo hujus capitis promissi : hoc, Arithmetica Logarithmorum, quàm sequenti capite ostendam.

Tertium, ob insignem utilitatem & compendiosissimum calculum Logarithmorum in nullis non Proportionibus absque hederà vendibile, jure suo ultimum hujus libri caput erit, reliquorumq; omnium, quæ hætenus dicta sunt, agmen claudet.

Calculus autem hujus Capitis non est alius ab eo quem *Cap. XI.* usurpavimus:

Si enim ex Sinu dato Logarithmus conveniens quærat, excerpitur ex Tabula Sinuum majus & minus dato, eorumq; Differentia notatur : deinde & ex Logarithmorum Tabulâ correspondentes majori &

D d 3

minori

minori prius inventis Logarithmi sumuntur, notatâ iterum eorum etiam differentiâ : tandem repetito Sinu, ex primis illis, eo, qui naturali Sinuum serie primus est, eoq; à dato subtracto, agatur juxta regulam Proportionum : quartusq; inventus à Logarithmo Sinus bis positi subtrahatur, & habebitur Logarithmus quæsitus. Ut;

Quærat^{ur} Logarithmus Sinûs 24435678.

Minus 24432026. L. 140927537. 24432026.

Majus 24436727. L. 140908297. 24435678.

4701.		19240.	3652
			19240
70264480	1		14608
4701			7304
23254	4		32868
18804			3652
44504			70264480
42309	9		
21958		L. 140927537	
18804	4		14947 S.
31540	7	L. 140912590. quæsitus.	

Si verò ex Logarithmo Sinus quærendus sit, erit processus sequens : additurq; tandem quartus inventus Sinui, qui Logarithmo bis posito respondet. Ut:

Quærat^{ur} Sinus Logarithmi 140912590.

Majus

Majus 140927537. S. 24432026. 140927537.
 Minus 140908297. S. 24436727. 140912590

19240	4701	14947
		4701
		14947
		104629
		59788
		70265847
		1924
		5772
		12545
		11544
		10018
		9620
		3984
		3848
		136

S. 24432026

3652 A.

Sinus 24435678 quæsitus.

Nec alia ratio calculi erit, si vel ex Logarithmo aut Differentiali quocunq; angulus : vel contra ex angulo Logarithmus vel Differentialis quæri debeat. Ur:

Quærat^{ur} Arcus vel angulus Logarithmi prioris 140912590.

Majus 140927537. 14°. 8'. 3"0. 140927537.

Minus 140908297. 14. 8. 40. 140912590.

19240.	10.	14947
		1924
14. 8. 30.		13468
8 A.		1479

Arcus vel Ang: 14. 8. 38. quæsitus.

Quæ

Quærat^{ur} ex Arcu vel Angulo $14^{\circ}. 8'. 3''0.$ Differentialis con-
veniens:

Minus $14^{\circ}. 8'. 3''0. + 137850526. 14^{\circ}. 8'. 3''0.$

Majus $14. 8. 40. + 137829665. 14. 8. 38.$

#0.	20461.	8.
5	A	4

81844

5 D.

16369. S.

+ 137850126.

+ 137833757. quæsitus.

Fiat Differentialis hic defectivus, quærat^{ur}q; ejus angulus:

Minus 137829665. $75^{\circ}. 51'. 2''0.$ 137829665.

Majus 137850126. $75. 51. 30.$ 137833757.

20461.	10.	4092
		#0

75° 51' 2"0.	40920
2 A.	20461

75. 51. 22. quæsitus, 40922 |
&c.

CAPUT XV.

De

ARITHMETICA LOGARITHMORUM.

Logarithmi, quatenus hoc capite in considerationem veniunt,
sunt vel Puri vel Impuri.

Puri vel simplices Logarithmi sunt, qui Sinibus
Tangentibus & Secantibus respondent.

Horum natura ex capite VI. jam nota est, eorumq; inventio, si
dictum

dictum Caput cum proximè antecedente conferas, promissima est.

Sinum nimirum datum quæris suo loco, in secundâ aut decimâ Columnâ, & offeret se tibi Logarithmus ejus in ejusdem lineæ quartâ aut octavâ columna: Ut:

Sinus dat. 69465837. || 72135743.

Ejus arc. 44°. || 46°. 10'.

Logarithm. 36433511. || 32662052.

Tangentium datorum arcus quære in suis Tabulis; quibus cognitis, exhibet Tabula Logarithmos convenientes seu Differentiales cum suis signis in mediâ columnâ. Ut:

Tangens datus 21864477. || 457362869.

Ejus arcus 12°. 20'. || 77°. 40'.

+ 152030683. || - 152030683.

Secantium datorum arcus quære in suis Tabulis: quibus cognitis exhibet Tabula Logarithmos reciprocè in tertiâ & quintâ columnâ, præposito tamen ijs signo -. Ut:

Secans datus 181193375. || 131183341.

Ejus arc. 56°. 30'. || 40°. 20'.

- 59432141. || - 27142571.

Logarithmî Impuri sunt, qui quidem è Sinuum, Tangentium vel Secantium Tabulis, non autem, ut Sinus, Tangentes & Secantes petuntur, sed aliunde dantur.

Sunt enim ejusmodi numeri aut in genere quilibet numeri multiplicandi, dividendi, aut in radices resolvendi, aut in Trigonometriâ Rectilinearum latera Triangulorum, hoc est, mensuræ linearum Rectarum in ulnis, pedib9, decempedis, &c. Quemadmodum enim in utraq; Trigonometriâ quidem angulorum & arcuum mensuræ sunt gradus & minuta & secunda,

Ec

ita in

ita in Rectilineis Triangulis lineæ per tales mensuras numerantur. Arcuum inventio facilima & promptissima est, aut ex fronte & sinistro latere, aut in fine paginarum, dextroque latere Canonis. Omnium verò mensurarum Rectilinearum promptuarium quoddam est Tabula Sinuum.

Itaq; quemadmodum Logarithmi arcuum & angulorum simplices & puri sunt: ita mensurarum impuri. Nam, cum paucissimi Sinus in Canone sint 4. 5. aut sex notarum, plurimi verò 7. & 8. rarissime autem mensuræ occurrant linearum 4. vel 5. nedum plurium notarum: liberum est operari volenti datum numerum, augere circulis quotcunq; in fine, ut auctus dati aut decuplus aut centuplus, aut millecuplus, aut 10000-plus, aut 100000-plus, aut 1000000-plus, &c. fiat, ut commodè aut sub Sinuum Titulis haberi queat, aut etiam in Tabulis Tangentium & Secantium. Sub Sinuum Titulo ubi inveneris, correspondebit continuo è regione Logarithmus competens. At si in Tangentium & Secantium Tabulis numerum dato tuo similem inveneris, accipe prius arcum correspondentem & beneficio ejus in nostro Canone juxta præcepta *Cap. VI. Logarithmos debitos*: mente tamen reservando aut memoria gratiâ exprimendo numerum locorum seu figurarum multiplicatis.

Quæratuf Logarithmus numeri 137. in Tabula Sinuum accuratè non reperti:

I. Inter Sinus:

Notarum 5.	14544.	ad arcum	0°. 0'. 30.
6.	135748.		0. 14. 40.
7.	1371980.		0. 47. 10.
8.	13701234.		7. 52. 30.

Ex Tangentibus.

Notat.

Notar. 5.	14544. ad arcum	0°. 0'. 3"0.
6.	135748.	0. 4. 40.
7.	1372109.	0. 47. 10.
8.	13703235.	7. 48. 10.
9.	137008615.	53. 52. 30.
10.	1370839526.	85. 49. 40.

Ex Secantibus.

Notar. 9.	137005592. ad arcum	43. 7. 20.
10.	1370837867.	85. 49. 0.

Invenimus itaq; inter Sinus quatuor Numeros, inter Tangentes sex, inter Secantes duos dato nostro similes: sed ex omnibus nullus dato similior est quam Secans 137005592. dummodo ultimæ vel dextimæ sex figuræ deleantur, subintelligantur. Hujus ergo Secantis & sui arcus $43^{\circ} 7' 2''$. Logarithmus quærat, qui est 31485156. cogitando tamen ultimas sex figuras abscindendas esse aut memoriæ causâ expressæ hoc modo signandos. -- 31485156-000000.

Simili modo, sed minus perfecte, per Tangentem 137008615. superius expressum quæsieris Logarithmum numeri 137, ex Tangentis illius arcu $53^{\circ} 52' 3''$. -- 31487265. -- 000000.

Nec fecus operandum erit signo + quando numerus figurarum datæ quantitatis excedit numerum figurarum Sinus ei similis. Ut si quærat Numeri 2327102. Logarithmus, invenies Sinum 232710. omnium similimum, sed deest ei una figura. Hujus ergo Logarithmo Tabulato reperto, qui est 606313081. adjiciatur + 0. & fiat 606313081 + 0. pro Logarithmo Numeri dati 2327102. Atq; appendices isti -- 000000. & + 0. causa sunt, cur Logarithmi ijs præfixi dicantur *Impuri*.

Addere Logarithmos similium signorum est, aggregatum utriusque cum signo communis exhibere. Ut:

=mi

Ec 2

InPu-

In Puris;

$$\begin{array}{r|l}
 - 56312554. & 4219130. \\
 - 73493409. A. & + 5393743. A. \\
 \hline
 - 129805963. & 9612873.
 \end{array}$$

In Impuris.

$$\begin{array}{r}
 3218607 - 00. \\
 4361939 - 000. A. \\
 \hline
 7580546 - 00000.
 \end{array}$$

Addere signorum dissimilium Logarithmos, est differentiam eorum cum signo majoris numeri exhibere.

Loco Additionis igitur instituitur minoris à majore subtractio, residuoq; præfigitur signum majoris Numeri, unde reliquus subtrahebatur. Ut:

In Puris:

$$\begin{array}{r|l}
 - 2100612. & - 2100612. \\
 3320366. A. & 1920933. A. \\
 \hline
 + 1219754. & - 179679.
 \end{array}$$

In Impuris.

$$\begin{array}{r|l}
 - 2100612 + 000. & - 2100612 - 000. \\
 3320366 - 00. A. & 1920933 + 00. A. \\
 \hline
 1219754 + 0. & 179679 - 0.
 \end{array}$$

Subtractio Logarithmorum ejusdem signi, itidem ut Additio, est facilima : præsertim si subtrahendus altero sit minor.

In Puris.

$$\begin{array}{r|l}
 - 129805963. & 9612873. \\
 - 56312554. S. & + 4219130. S. \\
 \hline
 - 73493409. & 5393743.
 \end{array}$$

In Im-

In Impuris.

$$7580546 - 00000.$$

$$4361939 - 000. S.$$

$$3218607 - 00.$$

Subtractio autem Logarithmorum, qui signa diversa præfixa habent, non est nisi Additio unius ad alterum, prænotaturq; Summæ nota majoris numeri. Ut:

In Puris.

$$- 73493409.$$

$$56312554. S.$$

$$- 129805963.$$

$$+ 5393743.$$

$$- 4219130. S.$$

$$+ 9612873 - 0.$$

In Impuris.

$$- 73493409 - 000.$$

$$56312554 + 00. S.$$

$$- 129805963 - 00000.$$

$$+ 5393743 + 0.$$

$$- 4219130 + 00. S.$$

$$+ 9612873 - 0.$$

Si porrò in processu Calculi *sequentis libri Tertijs vel alibi etiam* accadat, ut Logarithmus aliquis primæ vel secundæ seriei subtrahendus major sit Logarithmo ejusdem ordinis à quo fieri debet subtractio: addatur ad iusto minorem illum aliquis ex sequentibus, nihil prorsus aliàs significantibus; absolvaturq; subtractio deinde cum aucto hoc, uti decet.

$$230258510 + 0.$$

$$460517020 + 00.$$

$$690775530 + 000.$$

$$921034040 + 0000.$$

$$1151292550 + 00000.$$

Ec 3

Valor

Valor enim numeralis, siue horum Logarithmorum unum ad alium aliquem addas, siue ab eodem subtrahas, idem semper manet, uti apparet.

Exemplum Additionis.

$$\begin{array}{r} \text{L. } 69314718 - 000. \text{ Valor Numeralis } 50000. \\ 230258510 + 0. \text{ A.} \end{array}$$

$$\text{L. } 29957328 - 00. \text{ Valor Numeralis } 50000.$$

Subtractio ex ipso additionis hujus exemplo cuius in parulo est, ut nulla causa sit, quæ diutius hic nos detineat.

Ne autem Lectorem in eum lateat, unde hic & horum similes numeri oriuntur, paucis id ex Nepero hic aperiam. Principio omnes Sinus in proportionem duplā habent 69314718. 28. pro Differentia suorum Logarithmorum: per 51. posit. tr. de Constr. Canon. Nep. huiusq. duplum 138629436. 56. erit differentia omnium Logarithmorum, quorum Sinus sunt in ratione quadrupla: & triplum ejus videlicet 207944154. 84. erit differentia omnium Logarithmorum quorum Sinus sunt in ratione octupla. Deinde Omnes Sinus in proportionem decupla, habent 230258509. 96. pro Differentia suorum Logarithmorum: Quia enim ex Tabula radicali Sinus 80000000. habet Logarithmum suum 22314355. 12. Differentia autem inter Logarithmos 80000000. & octava partis, nimirum 10000000. est 207944154. 84. Unde per additionem sunt 230258509. 96. pro Logarithmo Sinus 10000000. Cumq. Sinus Totus ad hunc sit decuplus, omnes Sinus in ratione decupla eandem illam differentiam 230258509. 96. inter suos Logarithmos habebunt: & per consequens centupla proportioni respondebit hujus Logarithmi duplum 460517019. 92: triplumq. quod est 690775529. 88. erit differentia omnium Logarithmorum, quorum Sinus sunt in ratione millecupla, &c. Inde omnes Sinus in ratione composita ex duplo & decuplo habent Logarithmos suos differentia 69314718. 28. & differentia 230258509. 96. respectivè differentes. At ex Tabula abje. & videri licet.

Singulum Proportionet. Logarithmorum correspondentes Differentia.

Dupla	69314718.18.
Quadrupla	138629436.36.
Octupla	207944154.84.
Decupla	230258509.96.
20cupla	299573228.24.
40cupla	368887946.52.
80cupla	438202664.80.
Centupla	460517019.92.
200pla	529831738.20.
400pla	599146456.48.
800pla	668461174.76.
Millēcupla	690775529.88.
2000pla	760090248.16.
4000pla	829404966.44.
8000pla	898719684.72.
10000pla	921034039.84.
20000pla	990348758.12.
40000pla	1059663476.40.
80000pla	1128978194.98.
100000pla	1151292549.80.
200000pla	1220607268.08.
400000pla	1289921986.36.
800000pla	1359236704.64.
1000000pla	1381551059.76.
2000000pla	1450865778.04.
4000000pla	1520180496.32.
8000000pla	1589495214.60.
10000000pla	1611809569.72.
20000000pla	1681124288.00.
40000000pla	1750439006.28.
80000000pla	1819753724.56.
100000000pla	1842068079.68.

Ex

Ex haftenus dictis id etiam, quod insignis est utilitatis, evidens fit, nimirum:

Quomodo Logarithmorum quorumcunque Numerales valores exhiberi debeant.

Sive enim ex datis Logarithmis ijsq; vel Puris vel Impuris Sinus, Tangentes & Secantes, sive solus valor Numeralis quæri debeat: fit id juxta exempla sequentia.

Pro Sinubus, Tangentibus & Secantibus:

In Logarithmis Puris:

L. 51557257.	L. 22049307.
Arcus 36°. 40'.	Arcus 53°. 20'.
59715859.	80212319.
Sinus quæsitus.	Sinus quæsitus.
+ 29507950.	— 29507950.
Arc. 36°. 40'.	Arc. 53°. 20'.
74447242.	134323311.
Tangens quæsit.	Tangens quæsit.
— 51557257.	— 22049307.
Arc. 53°. 20'.	Arc. 36°. 40'.
167459702.	124669129.
Secans quæsit.	Secans quæsit.

In Impuris.

L. 977960 — 0	L. 254517785 + 00.
Arc. 82°.	Arc. 4°. 30'.
98026807.	7845910. 00.
Sin. quæsit.	Sin. quæsit.
— 3491368 — 00.	63503061. — 00.
Arc. 46°.	Arc. 32°.
103563079.	188707994.
Tang. vel Valor quæf.	Secans vel valor quæsit.

Cum au-

Cum autem non cuiusvis in promptu sint Tabulæ Tangentium & Secantium, suaserim Lectori Meo, ut ad solos Nostri Canonis numeros adfuescat, exemplorumq; sequentium rationem habeat in quibus Numeri superius indicati adhibentur, eorumq; beneficio vel addendo vel subtrahendo cujusvis oblati numeri Numeralis valor exquiritur; ut videre est. Nam

Sive impurum Logarithmum 977960 - 0. cujus valor Num. 9902681. liberare velis appendice -- 0. adde ei 230258510 + 0. & fiet inde 231236470. valoris pristini: &c. Sic à Logarithmo impuro 640797085 + 00. cujus valor Numeralis 164837, si subtraxeris 460517020 + 00. relinquetur Logarithmus 180280065. purus, ejusdemq; valoris, cujus erat ille prior impurus: &c.

Sive ex Defectivo -- 63503061 - 00. cujus valor Num. 188707998. Abundantem facere velis, adde ad eundem quemvis ex dictis numeris numero majorem, v. g. 460517020 + 00, & fiet inde 397013959. cujus valor 1887081. à priori nihil differt.

CAPUT XVI.

De

USU LOGARITHMORUM IN PRO-
portionibus quibuscunq; & expedità per
eos praxi.

NE immensus Canonis Nostri, quem NEPERUS verè mirificum vocat, ineffabilisq; usus in omni Arithmetica Lectorem lateat, NEPERUM secutus, hoc etiam Caput adiicio incomparabilis estimationis. Docebuntur autem omnia IV. sequentibus Problematibus,

PROBL. I.

Quomodo, ex trium Proportionalium datis Logarithmis medijs & alterius extremorum, alter extremus ejusq; Proportionale & arcus, si opus sit, per unicam duplicationem & subtractionem haberi possit.

FF

REGU-

REGULA. Proportionalis mediij Logarithmum duplica, à duplo Proportionalis extremi dati Logarithmum aufer : & relinquetur Logarithmus Proportionalis extremi reliqui quæfiti.

RATIO REGULÆ. Trium enim Proportionalium datis extremo altero & medio, ducitur vulgò medium in sefe, factumq; dividitur per extremum datum : quod prodit est extremum alterum quæsitum : at Logarithmis inventis succedit quadrata multiplicationi duplicatio, Divisioni Subtractio, juxta Regulam.

EXEMPLUM.

Vulgata est Proportio : Ut Sinus Totus 100000000. ad 70710678 : ita 70710678. (hoc est) Sinus Rectus 45°. ad 50000000. vel Sinum 30°. gr.

PRAEIS VULGARIS.

I.	II.
100000000.	70710678.
	70710678. M.
	4999999983219464. Factum.
	I 00000000 D.
	50000000. III. Quæf.

PRAEIS NOSTRA.

I.	II.
100000000.	70710678.
L.	L. 34657359.
O.	69314718. dupl.
	50000000. III. Propor. quæf.

Exemplum aliud.

Ut 105625290. ad 76604444 : ita 76604444. ad 55557157.
Vulgari via:

10562-

I.

II.

105625290.

76604444.

76604444. M.

5868240840549136. Factus

10562529

o. D.

55557158. III. Proport. quæritur

33°. 45.

Nostra;

I.

II.

105625290.

76604444.

— 5472764. L. 26651509.

53303018. dupl.

— 5472764. S.

58775782.

55557159. III. Proport. quæritur

cui respondet arcus 33°. 45.

PROBLEMA II.

Quomodo ex Trium Proportionalium datis Logarithmis Extremorum, Medius, ejusq; Proportionale & arcus, si opus sit, per unicam additionem & bipartitionem haberi possit.

REGULA. Proportionalium Logarithmos adde, productum bipartire, & emerget Logarithmus Medij Proportionalis quæsit.

RATIO REGULÆ. Trium enim Proportionalium data extrema multiplicantur invicem vulgò, Factiq; quæritur Radix Quadrata: at, apud nos, ut Divisioni succedit Subtractio, Multiplicationi Additio; ita Radicis quadratæ inventioni hec reponitur bipartitio.

Ff 2

Exm.

TRIGONOMETRIÆ

Exemplum.

Ut 100000000. ad Ignotum : ita Ignotus ad 50000000.

Praxis vulgaris.

I.	II.	III.
100000000.	Ignotus.	50000000.
		100000000. M.
		50000000. 00000000. Factus
		70710678. Ejus Radix quad.
		vel Medium Proportionale quasit.

Praxis nostra.

I.	II.	III.
100000000.		50000000.
L. 0.		L. 69314718.
		34657359. dimid.
		70710678. Mediū Propor. quasit.
		cui arcus 45°. correspondet.

Exemplum aliud.

Ut 105265290. ad Ignotum : ita Ignotus ad 55557158.

PRÆXIS LOGARITHMICA.

I.	II.	III.
105265290.		55557159.
— 5472764.		L. 58775782.
		— 5472764. A.
	aggr. L. 53303018.	
	dim. L. 26651509.	
		76604444. II. Proport. quasit.
		50°. arcus correspondens.

PROBLEMA III.

Quomodo ex quatuor Proportionalium, eorumquæ arcuum, datis Logarithmis tribus, Quartus, ejusque Proportionale & arcus haberi possit, per unicam additionem & subtractionem.

Hic au-

Hic autem antea opus est, ut Proportio ita adornetur, ut Quartum quæsitum semper ultimo loco statuatur, ita ut datorum primum se habeat ad secundum, ut tertium ad quartum, quod adhuc ignoratur.

REGULA. Ab aggregato Logarithmorum secundi & tertij, subtrahere Logarithmum primi Proportionalis, & proveniet Logarithmus quarti.

RATIO REGULÆ. Vulgò enim ducitur secundum Proportionale in tertium, & factus dividitur per primum.

Exemplum.

Ut 76604444. ad 98480775 : ita 50000000. ad Ignotum. Vel quod idem est, neglectis Sinibus ut Sinus 50°. ad Sinum 80°. ita Sinus 30°. ad Ignotum Ignoti arcus Sinum.

I.	II.	III.	IV.
Arc. 50°.	80°.	30°.	
76604444.	98480775.	50000000.	
L. 26651509.	L. 1530883.	L. 69314718.	
		L. 1530883. A.	
		aggr. L. 70845601.	
		L. 26651509. S.	
		resid. L. 44194092.	
		64278761. IV. Prop. quæf.	
		arc. 40°.	

Aliud Exemplum.

Ut Tangens 43°. ad Sinum 57°. ita Tangens 35°. ad Sinum Arcus ignoti ignotum.

I.	II.	III.
43°.	57°.	35°.
+ 6986995.	L. 17593730.	+ 35637850.
		L. 17593730. A.
		aggr. + 53231580.
		Ff 3 aggr.

TRIGONOMETRIÆ

$$\begin{array}{r}
 \text{aggr.} + 53231580. \\
 + 6986995. \text{ S.} \\
 \hline
 \text{resid. L. } 46244585. \\
 \text{correspond. S. } 62974151. \\
 \text{arcus } 39^\circ. 1'. 5''2.
 \end{array}$$

Hac ratione Proportionalium arcus absq; eorum Sinibus, Tangentibus, Secantibus aut Proportionalibus quibuscunq; acquiruntur. Quod certè Compendium est incomparabile, ut *Tertio Libro* videbitur.

PROBLEMA IV.

Quomodo ex quatuor continuè Proportionalium datis Logarithmis extremorum eorumve arcuum; mediorum quodvis, eorumde arcuum quivis per simplicem quasi tripartitionem haberi possit.

REGULA. Logarithmum alterutrius extremi duplica, ad duplum adde Logarithmum extremi reliqui, aggregatumq; tripartire, & proveniet Logarithmus Medij priori extremo proximi: eodemq; modo deinde & alterum medium,

RATIO REGULÆ. Vulgò enim id extremum, cujus Medium propinquum vis, quadratè multiplicatur (vel, ducitur in sese), Factumq; ducitur in extremum reliquum, & tandem hujus facti quæritur Radix Cubica, quæ Medium illud est priori extremo, quod in se ducebatur, contiguum: Heic apud Nos extractioni Radicis Cubicæ succedit Tripartitio,

EXEMPLUM.

I. II.

I.	II.	III.	IV.
40292418.			105625290.
L. 90900686.			— 5472764.
181801372.		duplum.	— 10945528.
— 5472764. A.			L. 90900686. A.
L. 176328608.	—	aggregatum	L. 79955158.
L. 58776203.		$\frac{1}{7}$.	L. 26651719.
55557022.	II. Proport. Quæsi.	III.	76604283.

ALIUD.

I.	II.	III.	IV.
141421356.			50000000.
— 34657359.			L. 69314718.
— 69314718.		duplum.	L. 138629436.
L. 69314718. A.			— 34657359. A.
L.	o.	aggregatum	L. 103972077.
L.	o.	$\frac{1}{7}$.	L. 34657359.
100000000.	II. Proport. Quæsi.	III.	70710678.

Innumera calculi compendia possunt ex hisce Problematibus, tanquam ex perenni fonte, deduci, quorum tamen plurima in sequentibus Operis mei Mathematici libris Lector inveniet. Atq; hic esto etiam

FINIS LIBRI
SECUNDI.

BENJAMINIS URSINI

SPROTTAVI SILESI,

Mathematici Electoralis Brandenburgici,

TRIGONOMETRIÆ

LIBER III.

De Usu Canonis Logarithmorum
in utrâq; Trigonometriâ.

SECTIO I.

De Mensuratione Triangulorum Planorum
sive Rectilineorum.

CAPUT I.

De

SOLUTIONE TRIANGULORUM

Rectilineorum Rectangulorum.

Trigonometria alia est Triangulorum Rectilineorum, alia Sphæricorum.

Tro varietate nimirum Objecti, Trianguli nimirum, quod & ipsum *supra lib. 1. cap. 1.* diximus aut Planum esse aut Sphæricum.

Trigonometria Rectilineorum est vel Rectangulorum vel Obliquangulorum.

Ita enim etiam variare Triangula Rectilinea ostensum est
Cap. VI. Lib. I.

Trigonometria Rectilineorum Rectangulorum dimittitur sola Triangula Rectilinea ea, quæ Angulum habent Rectum.

Eaq;

Eaq; omnis absolvitur duabus Propositionibus sequentibus:

PROPOSITIO I. Rectangulor:

In Triangulo Rectangulo Logarithmus CRURIS cujuscung, æquatur aggregato ex Logarithmo ANGULI ei OPPOSITI, & Logarithmo HYPOTENUSÆ.

RATIO. Quodvis enim crus se habet ad Sinum Anguli oppositi ita, ut Hypotenusa ad Angulum Rectum. Ergo, cum Quarti Proportionalis nimirum Anguli Recti vel 90° , Logarithmus sit 0. æquabuntur Logarithmi mediorum Proportionalium, nimirum Anguli & Hypotenusæ simul sumtorum, Logarithmo extremi reliqui, videlicet cruris angulo priori oppositi.

Quare in quocung, Triangulo Rectangulo Hypotenusa, Cruris, angulo, ei Cruri oppositi duobus datis, habebitur reliquum, solâ aut additione aut subtractione adhibita: idq; per casuum trium sequentium aliquem.

CASUS I.

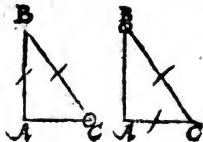
Dato CRURE alterutro, cum HYPOTENUSÆ, habetur Logarithmus,

ANGULI dato Cruri OPPOSITI:

SUBTRAHENDO à Logarithmo Cruris dati Logarithmum Hypotenusæ,

Exempla.

I. Datur AB Crus majus 40. ped. & Hypotenusa BC 50. ped. Quæritur Angulus BCA cruri dato oppositus.



G g

AB 40.

AB 40. p. L. 916291—0000.

BC 50. p. L. 693147—0000. S.

L. 223144.

53°. 7'. 4"9. ACB.

II. Datur AC crus minus 30. ped. & Hypotenusa BC 50. ped. Quæritur Angulus ABC iterum Cruri dato oppositus.

AC 30. ped. L. 1203973—0000.

BC 50. ped. L. 693147—0000. S.

L. 510826.

36°. 52'. 1"1. ABC.

II. CASUS.

Dato CRURE alterutro cum ANGULO OPPOSITO,

habetur Logarithmus

HYPOTENUSÆ,

SUBTRAHENDO à Logarithmo Cruris Logarithmum anguli.

Exempla.

I. Datur AB Crus Majus 40. ped. cum Angulo opposito ACB 53°. 7'. 4"9. Quæritur Hypotenusa BC.



AB 40. ped. L. 916291—0000.

ACB 53°. 7'. 4"9. L. 223144. S.

L. 693147—0000.

50. ped. BC.

II. Datur AC Crus minus 30. ped. cum Angulo opposito ABC 36°. 52'. 1"1. Quæritur Hypotenusa BC.

AC 30.

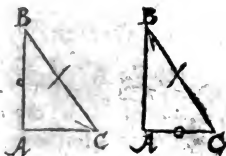
$$\begin{array}{r}
 AC \ 30. \text{ ped.} \quad L. \ 1203973 - 0000. \\
 ABC \ 36^{\circ}. 5' 2. 1'' L. \ 510826. \quad S. \\
 \hline
 L. \ 693147 - 0000. \\
 50. \text{ ped.} \ BC.
 \end{array}$$

III. CASUS.

Datâ HYPOTENUSA cum ANGULO ALTERUTRO,
habetur Logarithmus,
CRURIS Angulo dato OPPOSITI,
ADDENDO Logarithmos illorum.

Exempla.

I. Datur Hypotenusa BC 50. ped.
cum Angulo Majore ACB $53^{\circ}. 7'. 4''$.
Quæritur Crus Majus AB.



$$\begin{array}{r}
 BC \ 50. \text{ ped.} \quad L. \ 693147 - 0000. \\
 ABC \ 53^{\circ}. 7'. 4'' L. \ 223144. \quad A. \\
 \hline
 L. \ 916291 - 0000. \\
 40. \text{ ped.} \ AB.
 \end{array}$$

II. Datur Hypotenusa BC 50. ped. cum Angulo Minore A
BC $36^{\circ}. 5' 2. 1''$. Quæritur crus Minus AC.

$$\begin{array}{r}
 BC \ 50. \text{ ped.} \quad L. \ 693147 - 0000. \\
 AB \ C36^{\circ}. 5' 2. 1'' L. \ 510826. \quad A. \\
 \hline
 L. \ 1203973 - 0000. \\
 30. \text{ ped.} \ AC.
 \end{array}$$

Duo ad hanc Propositionem monenda duxi, quorum primum totum hunc librum tertium concernit, alterum hanc Propositionem & caput sequens:

I. Utut Canon Logarithmorum ex Sinu Toto 100000000. constructus est: non est tamen opus, ut Sinibus & Logarithmis in

mis integris, ut in Canone exstant, utamur, sed sufficit, si ultimas cujusvis numeri Tabulatæ, sive is Sinus sit sive Logarithmus, duas vel tres figuras in mente removēamus, fingamusq; Sinum Totum esse aut 100000. aut 1000000. Nos in posterum utemur Sinu Toto 1000000. itaq; duas ultimas Canonis notas ubiq; abjiciemus: idq; citra omnem, etiam minutissimum calculi errorem. Hinc factum, etsi revera Sinuum 30. 40. 50. ped. Logarithmi in Canone sint

69314718. — 000000.

91629073. — 000000.

120397281. — 000000.

nos usurpaverimus horum loco sequētes Logarithmōs

693147 — 0000.

916291 — 0000.

1203973 — 0000.

expeditioris scilicet gratiā calculi.

II. Cum accidere possit creberrimè & in Primā hac Propositione & Capite sequenti, ut Logarithmus is, à quo fieri debet subtractio minor sit eo, qui subtrahi debet, sciat Lector augendum illum esse Logarithmorum quos *Libr. II. Cap. XV. p. 221.* recensuimus, uno aliquo nimirum aut 2302585 + 0. aut 5605170 + 00. aut reliqu.

Ut si in exemplo secundo Casus Primi latus minus AC 76. ped. Angulusq; ABC 29°. 30. Quæraturnq; Hypotenusa BC, erit calculus talis:

$$\begin{array}{rcl}
 & L. & 2577022 - 000. \\
 & \hline
 & & 2302585 + 0. A. \\
 AC\ 76.\ ped.\ L. & & 274437 - 0000. \\
 ABC\ 29^\circ.\ 30.\ L. & & 708416. \quad S. \\
 & \hline
 & L. & 1868606 - 000. \\
 & & 154. 3. 3. 8. BC.
 \end{array}$$

PROPO.

PROPOSITIO II. Rectangulor.

In Triangulo Rectangulo Logarithmus CRURIS cujusvis, æqualur aggregato ex Differentiali ANGULI OPPOSITI, & Logarithmo CRURIS reliqui.

RATIO. Alterutrum enim crus se habet ad Tangentem sibi oppositi anguli, ut reliquum crus ad Sinum Totum. Unde Regulæ veritas itidem *ut supra*, satis est manifesta.

Quare in quocumq; Triangulo Rectangulo; ex Cruribus Recti, & angulo alteri eorum opposito duobus quibuscumq; datis, tertium per hanc atq; proinde cetera omnes Rectanguli Trianguli partes per primam iterum innoscent, è casibus tribus sequentibus.

CASUS I.

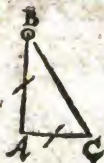
Datis CRURIBUS,
datur Differentialis

ANGULI cujuscumq;

SUBTRAHENDO à Logarithmo cruris angulo quaesito oppositi, Logarithmum cruris reliqui.

Exempla.

I. Dantur Crura AB 40. ped. AC 30. ped. Quæritur Angulus Minor ABC.



AC 30. ped. L. 1203973 — 0000.

AB 40. ped. L. 916291 — 0000. S.

+ 287682.

36°. 52. 1". ABC.

II. Dantur eadem. Quæritur Angulus Major ACB.

Gg 3

CAPUT

AB 40. ped. L. 916291 — 0000.

AC 30. ped. L. 1203973 — 0000. S.

— 287682.

53°. 7'. 49". ACB.

Notet hic Lector, cum L. 1203973 — 0000. à L. 916291 — 0000. subtrahi non potuerit, subductum fuisse nihilominus hunc ab illo, atq; ob inversum calculum Differentialem emergentem factum fuisse Defectivum : quod in hoc casu semper accidit, cum Angulus Major quæritur.

CASUS II.

Dato CRURE quocunq; cum ANGULO OPPOSITO,
habetur Logarithmus

CRURIS reliqui,

SUBTRAHENDO à Logarithmo cruris dati Differ-
entialem Anguli dati.

Exempla.

I. Datur crus minus AC 30. ped. cum Angulo Mi-
nore Opposito ABC 36°. 52'. 1". Quæritur Crus
Majus reliquum AB.

AC 30. ped. L. 1203973 — 0000.

ABC 36°. 52'. 1". + 287682. S.

L. 916291 — 0000.

40. ped. AB.

II. Datur crus Majus AB 40. ped. cum Angulo Majore Op-
posito 52°. 7'. 49". Quæritur crus Minus AC reliquum.

AB 40. ped. L. 916291 — 0000.

ACB 52°. 7'. 49". — 287682. S.

L. 1203973.

30. ped. AC.



CASUS

CASUS III.

Dato CRURE quocunq; & ANGULO ADJACENTE,

datur Logarithmus

CRURIS reliqui,

ADDENDO ad Cruris dati Logarithmum dati Anguli Differentiallem.

Exempla.

I. Datur crus Majus AB 40. ped. & Angulus Minor ABC eidem adjacens $36^{\circ}.52.1''$. Quæritur crus Minus AC reliquum.



AB 40. ped. L. 916291 — 0000.

ABC $36^{\circ}.52.1''$. + 287682. A.

L. 1203973 — 0000.

30. ped. AC.

II. Datur crus Minus AC 30. & Angulus Major A CB eidem adjacens $53^{\circ}.7.4''$. Quæritur Crus Majus AB reliquum.

AC 30. ped. L. 1203973 — 0000.

ACB $53^{\circ}.7.4''$. — 287682. A.

L. 916299 — 0000.

40. ped. AB.

CAPUT II.

De

SOLUTIONE TRIANGULORUM

Retilinearum Obliquangulorum.

Expedi-

EXpeditis Triangulis Rectilineis Rectangulis, restant Obliquangula.

De ijs sunt sequentes tres Propositiones:

PROPOSITIO I. Obliquangulor.

In omni Triangulo (tam Rectangulo quam Obliquangulo) aggregatum ex Logarithmis ANGULI cujusvis, & LATERIS ei ADJACENTIS, aequatur aggregato ex Logarithmis LATERIS & ANGULI prioribus OPPOSITORUM.

RATIO. Quia nimirum omnium Laterum ad oppositorum Angulorum Sinus eadem est ratio: adeoq; Factum ex Anguli cujusvis Sinu Recto, & latere quovis ei adjacente, æquatur Facto ex latere subtendente priorem Angulum, & Sinu Anguli subtensi à priore latere.

Quare iterum ex duobus Angulis quibuscumq; data speciei, & suis oppositis Lateribus, si tria dantur, quantum quodcumq;, atq; inde cetera omnes Trianguli partes innoscent per unicam Additionem & Subtractionem juxta casus duos sequentes.

Datam autem speciem Anguli alicujus vocamus cum indicatur, sitne is Acutus vel Obtusus.

CASUS I.

Datis DUOBUS LATERIBUS & ANGULO

UNI eorum OPPOSITO,

datur Logarithmus

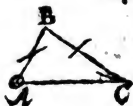
ANGULI reliquo lateri OPPOSITI:

ADDENDO Logarithmos Lateris & Anguli contiguum, & **ab aggregato SUBTRAHENDO** Logarithmum Lateris reliqui.

EXEMPLUM.

Datur

Dantur Latera AB 76. ped. & BC 99. 0350. ped. cum angulo ACB Lateri AB opposito $41^{\circ} 39' 4''$. Quæritur Angulus BAC Lateri BC oppositus.

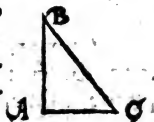


$$\begin{array}{rcl}
 BC & 99.0350 \text{ ped. L.} & 9697 - 0000. \\
 BCA & 41^{\circ} 39' 4'' \text{ L.} & 408580. \quad A. \\
 \hline
 & \text{aggr L.} & 418277 - 0000. \\
 AB & 76. \text{ ped. L.} & 274436 - 0000. \quad S. \\
 \hline
 & \text{resid. L.} & 143841, \quad \text{si acutus} \\
 & & 60. BAC. \\
 & & 120. \text{ si obtusus.}
 \end{array}$$

Porrò ex hoc casu *estimari etiam possunt Anguli Dubij, sive Acuti, an Recti, an verò Obtusi*, ad Exemplum sequens.

Videatur Angulus BAC , de quo dubitatur, cujus sit speciei.

Dantur autem latus BC 50. ped. AB 40. ped. & angulus ACB huic oppositus $53^{\circ} 7' 49''$. Quæritur angulus BAC Dubius.



$$\begin{array}{rcl}
 BC & 50. \text{ ped. L.} & 693147 - 0000. \\
 BCA & 53. 7. 49. \text{ L.} & 223144. \quad A. \\
 \hline
 & \text{aggr. L.} & 916291 - 0000. \\
 AB & 40. \text{ ped. L.} & 916291 - 0000. \\
 \hline
 & \text{resid. L.} & 0. \\
 & & 90^{\circ}. BAC \text{ Rectus.}
 \end{array}$$

CASUS II.

Datis Duobus Angulis & Latere Unicorum Opposito,

datur Logarithmus

Anguli reliquo Lateri Oppositi,

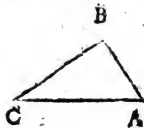
Hh

ADDEN-

ADDENDO iterum Logarithmos Lateris & Anguli
contiguorum, & ab Aggregato SUBTRAHENDO
Logarithmum Anguli reliqui.

Exempla.

Dantur Anguli ACB $41^{\circ}.39'.4''$. BAC
60. cum latere B-C angulo huic opposito
99.0350. ped. Quæritur latus AB angulo reli-
quo oppositum.



BC 99.0350. ped. L. 9697 — 0000.

BCA $41^{\circ}.39'.4''$. L. 408580. A.

aggr. L. 418277 — 0000.

BAC 60. L. 143841. S.

resid. L. 274436 — 0000.

76. ped. AB.

Cum ergo in Triangulo hoc habeamus duos angulos, non
ignorabitur Tertius, qui reliquorum ad duos Rectos com-
plementum est: uti apparet.

BAC 60.

BCA $41^{\circ}.39'.4''$. A.

aggr. $101^{\circ}.39'.4''$. S.

duo Recti 180.

ABC $78^{\circ}.20'.56''$.

Quinimò & ex sequenti calculo inveniemo Tertium latus AC.

AB 76. ped. L. 274436 — 0000.

ABC $78^{\circ}.20'.56''$. L. 20820. A.

aggr. L. 295256 — 0000.

(2302585 + 0. A.

L. 2597841 — 0000.)

ACB $41^{\circ}.39'.4''$. L. 408580. S.

resid. L. 2189261 — 0000.

112. AC.

PRO-

PROPOSITIO II. Obliquangulor.

In Solis Obliquangulis, Logarithmus aggregati CRURUM subductus à summa facta ex Logarithmo Differentiæ crurum & Differentiali Semiaggregati suorum OPPOSITORUM ANGULORUM relinquit Differentiali Semidifferentiæ eorundem.

RATIO. Ut enim aggregatum crurum ad differentiam crurum : ita Tangens Semiaggregati suorum oppositorum angulorum se habet ad Tangentem Semidifferentiæ eorundem : per Axiom. III. Planor. Pitisc.

Unde ex duobus Cruribus, & angulo comprehenso, innotescunt per hanc anguli reliqui cruribus datis oppositi : & per præmissam reliquum etiam latus.

(Atq; hujus Propositionis unum quidem Præceptum calculi, unaq; methodus est : Exempla autem pro Datorum varietate quodammodo calculo variant.)

Datis enim DUOBUS LATERIBUS quibuscunq;
& ANGULO ab ijs COMPRE-
HENSO,

habentur ANGULI duo RELIQUI,
Processu & Calculo sequenti :

Data Crura primò adduntur, aggregatq; Logarithmus quæritur : deinde & minus à majori subducitur, residuiq; vel *differentia* Logarithmus quæritur : postea Angulus datus à duobus Rectis vel 180° . subtrahitur, reliqui dimidium est *Semiaggregatum angulorum quæsitorum*, cujus Differentialis additur ad Logarithmum *Differentiæ Crurum*, & ab aggregato, quod Differentialis est, subducitur Logarithmus aggregati Crurum,

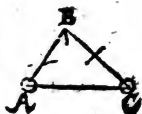
Hh 2

quod

quod remanet est Differentialis *Semidifferentia* Angulorum *quæſitorum*. Hæc deniq; Semidifferentia addita Semiaggregato eorundem superius invento exhibet ex angulis quæſitis majorem, subtracta ab eodem, minorem.

Exempla.

I. In Triangulo apposito datur angulus ABC $105^{\circ}. 5'2. 2''4$. ejusq; crura AB 25. ped. & BC 37. ped. Quærentur Anguli BAC & BCA.



AB 25.

BC 37.

aggr. 62. L. 478035 — 0000.

differ. 12. L. 2120259 — 0000.

ABC $105^{\circ}. 5'2. 24$. S.

180.

aggr. 74. 7. 36.

Semiaggr. 37. 3. 48 + 280656.

+2400915 — 0000.

+1922880.

Semidiff. angl. quæſ. $8^{\circ}. 19. 1''$.

Semiaggr. eorund. 37. 3. 48.

45. 22. 49. BAC.

28. 44. 47. BCA. Anguli quæſiti.

Atq; hoc Exemplum est omnium simplicissimum ad ipsum filum præcepti ita decurrens, ut Tironem nulla ratione tardare queat: sed sequentia requirunt, præsertim apud inexercitatos, majorem cautionem.

II. Esto in priori Triangulo Angulus ABC $78^{\circ}. 2'0. 5''6$. Crus AB 76. ped. BC 99. 0. 3. 50. Quærentur Anguli BAC & ACB.

AB

AB 76. ped.

BC 99.0350. ped.

aggr. 175.0350. L. 1742794 — 000.

diff. 23.0350. L. 3770755 — 000.

ABC 78°. 20'. 56". S.

180.

A. S.

aggr. 101.39. 4.

dim. 50. 49. 32. — 204767.

+ 3565988 — 000.

+ 1823194.

Semidiff. angular. quæsit. 9°. 10'. 28". A. & S.

Semiaggr. eorundem 50. 49. 32.

60. 0. 0.

BAC.

41. 39. 4.

BCA.

Duo in hoc Exemplo attendenda sunt : 1. quia aggregatum crurum 175. 0350. septem notarum est, Sinus autem Totus, ut nos eum usurpamus, tantum 1000000. (reliquas duas enim fingimus ubi vis abesse) abjicitur tam ab aggregato, quam à differentiâ crurum ultima nota, ut aggregatum sex notarum sub Sinibus 8. notarum, Differentia autem 5. notarum sub Sinibus 7. notarum, uti decet, habeantur, & per consequens eorum etiam Logarithmi.

2. Semiaggregatum angulorum quæditorum est 50°. 49'. 32": ejus ergo Differentialis 204767. Defectivus. Itaq; (aliàs si abundans fuisset, debuisset addi) cum minor sit Logarithmo Differentiæ crurum, subtrahitur ab eodem, proditq; Differentialis abundans : Cetera fiunt, ex indicio præcepti.

III. In Triangulo priori ABC sint data, crus AC 37. ped. AB 25. ped. Angulus BAC etiam ab ijs comprehensus, 16°. 38'. 2". Quærantur anguli reliqui ABC & BAC.

Hh 3

AC 37.

AC 37. ped.

AB 25. ped.

aggr. 62. L. 478035 — 0000,

diff. 12. L. 2120259 — 0000.

BAC 16°. 38'. 2". S.

180.

A. S.

aggr. 163. 21. 58.

dim. 81. 40. 59 — 1922873.

+ 197386 — 0000,

— 280649.

Semidiff. angulor. 52°. 56'. 1½". A. & S.

Semiaggr. eorund. 81. 40. 59.

134. 37. 11. CBA.

28. 44. 47. ACB.

Huic autem Exemplo, præter id, quod paulò ante in proximo, secundo loco, monui, id etiam accidit, ut Logarithmus aggregati crurum 478035 — 0000. à + 197386 — 0000. uti debebat, subtrahi nequeat: Subtrahitur ergò hic ab illo, estq; qui prodit Differentialis eam ob causam Defectivus.

PROPOSIT. III. Obliquangulor.

In Obliquangulis summa Logarithmorum Aggregati & Differentiæ CRURUM, est æqualis summa Logarithmorum BASISUM veræ & alternæ.

RATIO. Quia Basis vera se habet ad aggregatum crurum, ut Differentia crurum ad Basim alternam: per Axiom. IV. Planor. Pitisci.

Unde ex Obliquangulo datorum laterum fiunt duo Rectangula notarum hypotenusarum, cum altero cujusq; crure, quæ per I. Rectangulor. reliquas etiam omnes Obliquanguli partes, Angulos scilicet, notas reddent.

Datis

Datis enim tribus LATERIBUS, habentur Segmenta LATERIS MAXIMI, quæ à Perpendiculari ab opposito angulo decedente fiunt;

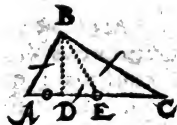
Processu & calculo sequenti:

Cum Data colliguntur in unam Summam, minusq; à majori insuper subtrahitur; quæruntur deinde tam *Aggregati* quàm *Differentia* hoc modo inventorum Logarithmi, addunturq; ab hac summâ subducitur Logarithmus *Basis vera* seu lateris Maximi & remanet Logarithmus *Basis alterna*. Hâc *Base alternâ* subtractâ à *Base verâ*, residuoq; bisectò prodit Segmentum Minus vel *Casus Minor*: quo iterum subductò à *Base verâ*, remanebit *Casus Major* seu Segmentum lateris Majoris Majus.

Quid *Basin veram*, *alternam*; *Casum Majorem & Minorem* dicamus, videatur *Libro I. Cap. IX. pag. 52.*

EXEMPLUM.

In Triangulo ABC appositò dantur Omnia Latera: AC Maximum 50. ped. & AB 25. ped. BC 37. p. minora. Quæruntur anguli, vel potius (citius enim anguli haberi nequeunt) segmenta lateris AC, quorum majus est DC, minus AD.



AB 25.

AB	25. ped.		
BC	37. ped.		
aggr.	62 L.	478035 — 0000.	
diff.	12. L.	2120259 — 0000.	A.
aggr.	L.	2598294 — 00000000.	
BC	50. ped. L.	693147 — 0000.	S.
resid.	L.	1905147 — 0000.	
		14.8.8.0.0.	E C. Basis alterna.
		50.0.0.0.0.	B C. Basis vera.
		35.1.2.0.0.	AE.
		17.5.6.0.0.	AD casus vel segm. min.
		50.0.0.0.0.	
		32.4.4.0.0.	DC casus vel segm. maj.

Inventis segmentis hisce facilimum fuerit Triangulorum ABD & BDC ad D Rectangulorum, adeoq; ipsius Obliquanguli ABC Trianguli angulos *per I. Proposit. Rectangulor.* invenire.

Ut Exemplum addam, in quo è minoribus lateribus alterutrum pro Basi vera statuitur, perpendiculumq; extra Triangulum cadit, superyacuum duxi : ne Tirones id necessarium esse credant. Sufficit enim ad hunc calculum ut assueverint : ad quem nullum non Triangulum applicari potest.

Atq; hæc est omnis Trigonometria Rectilincorum ; Propositionibus V. , casibusq; in universum non pluribus quam X. constans : quod quanti æstimij sit, judicabunt, qui intelligunt. Ego ne quâ in parte Lectori Meo desim, brevis *ἀνακεφαλαίωσις* loco, omnium illorum casuum succinctam recensionem subjungo : unde quam promissimè quivis necessaria depromere poterit.

TRIAN-

TRIANGULORUM
 Rectilinearum
 RECTANGULORUM.

- I. Dato CRURE alterutro cum HYPOTENUSA : habetur ANGULUS dato CRURI OPPOSITUS. Per Cas. I. Prop. I. p. 233.
- II. Dato CRURE alterutro cum ANGULO OPPOSITO : habetur HYPOTENUSA. Per Cas. II. Prop. I. p. 234.
- III. Data HYPOTENUSA cum ANGULO alterutro : habetur CRUS angulo OPPOSITUM. Per Cas. III. Prop. I. p. 235.
- IV. Datis CRURIBUS : habetur ANGULUS quivis. Per Cas. I. Prop. II. p. 237.
- V. Dato CRURE quocungq; cum ANGULO OPPOSITO : habetur CRUS reliquum. Per Cas. II. Prop. II. p. 238.
- VI. Dato CRVRE quocungq; cum ANGULO ADJACENTE : datur CRUS reliquum. Per Cas. III. Prop. II. p. 239.

In OBLIQUANGULIS verò

- VII. Datis Duobus LATERIBUS, & ANGULO uniorum OPPOSITO : habetur ANGVLUS reliquo OPPOSITVS. Per Cas. I. Prop. I. p. 240.
- VIII. Datis Duobus ANGVLIS, & LATERE uniorum OPPOSITO : habetur LATVS reliquo OPPOSITVM. Per Cas. II. Prop. I. p. 241.
- IX. Datis Duobus LATERIBVS & ANGULO ab ijs COMPREHENSO : habentur ANGVLII duo reliqui. Per Prop. II. p. 243.
- X. Datis Tribus LATERIBVS : inveniuntur ANGVLII. Per Prop. III. p. 247.



LIBRI III.
TRIGONOMETRIÆ,

SECTIO II.

De Trigonometriâ Sphæ-
ricorum.

CAPUT III.

De
SOLUTIONE TRIANGULORUM
Quadrantalium.

Trigonometria Sphæricorum est vel Quadrantalium, vel non Quadrantalium.

Atq; Quadrantalium quidem simplicium, non Multiplicium; hoc est, qui non plures quam Angulum unum Rectum, aut latus unum habent Quadrantem; reliquas autem quinque partes non Quadrantes.

In Quadrantalibus tres partes, quæ à Recto Angulo vel Quadrante latere remotiores sunt, in sua complementa convertuntur, quas *memoria causa* in sequentibus semper punctis notabimus.

Ipsæ autem Angulus Rectus aut latus Quadrans ex calculi processu quasi excluduntur, nec reliquis quinque partibus Triangularibus adnumerantur; nisi quatenus eorum respectu, tres illæ, quas diximus, partes punctis insignantur.

Unde vel latera seu arcus duo inter quos Angulus Rectus interjicitur, vel Anguli duo, quos inter Latus Qua-

Quadrans intercipitur, accipiuntur, ac si contigua essent,

Tres autem & hic, uti & in *Rectilineis Rectangulis*, partes in quæstionem veniunt.

Earumq; Una dicitur *Intermedia*, quæ scilicet reliquis duabus aut interponitur, aut opponitur.

Ceteræ verò, illo respectu dicuntur ipsi *Intermediæ Circumpositæ*, hoc eidem *Oppositæ*.

Cum enim tres in quæstionem venientes partes sunt contiguæ, dicitur ea quæ reliquis interjicitur, *Intermedia Interposita*: reliquæq; sunt *Extrema Circumpositæ*. At cum duæ saltem sunt contiguæ, tertia autem solitaria, dicitur hæc *Intermedia Opposita*, reliquæ *Extrema Opposita*.

Quomodocunq; verò hæ partes cadant, ex tribus in quæstionem venientibus partibus, datis duabus invenitur Tertia ex indicio sequentium duarum Propositionum.

PROPOSITIO I. Quadrantalium.

In Triangulis Sphæricis Quadrantalibus Logarithmus INTERMEDIÆ aequatur aggregato ex Differentialibus CIRCUMPOSITARUM EXTREMARUM.

RATIO. Tangens enim alterius extremæ circumpositæ est ad Sinum Rectum Interpositæ, ut Sinus Totus ad Tangentem reliquæ extremæ, ut ex vulgaribus Trigonometrie demonstrationibus patet.

Quare in quocunq; Triangulo Sphærico Quadrantali, datis trium partium congruarum duabus habetur reliqua per Causus duos sequentes:

CASUS I.

Datis EXTREMIS CIRCUMPOSITIS
habetur

Logarithmus

INTERMEDIÆ INTERPOSITÆ:

ADDENDO illarum Differentialles.

Quod si autem Extrema illa punctis notata fuerint, sumantur illorum complementa, & in hoc casu & seqq:

EXEMPL.

In Triangulo Sphærico BSC ad C Quadrantali datur Latus SC $17^{\circ}.3'1.5''4.$ & Angulus BS 37° . Extremæ circumpositæ partes. Quæritur BC Intermedia Interposita.



$$\begin{array}{rcl}
 \text{SBC } 53^{\circ} & - & 282954. \\
 \text{SC } 17.3'1.5''4. & + & 1152349. \text{ A.} \\
 \hline
 & & \text{L. } 869395. \\
 & & 24^{\circ}.47.4''. \text{ BC.}
 \end{array}$$

CASUS II.

Datâ EXTREMAR. CIRCUMPOSITAR.
alterâ & INTERMEDIâ,
habetur

Logarithmus

EXTREMAR. CIRCUMPOSIT. reliquæ,
SUBTRAHENDO à Logarithmo Intermediæ Differentiallem Extremæ datæ.

Quod si autem Differentiallem abundantem à Logarithmo

rithmo Intermediæ subtrahere nequeas, subtrahere hunc ab illo: scito autem iterum Differentialē, qui prodit, esse Defectivum.

Illius operationis exempla ubivis sunt obvia: hujus est id quod sequitur.

EXEMPL.

In Triangulo B S C ad C iterum Quadrantali datur B C $24^{\circ}. 47'. 4''.$ & S C $17^{\circ}. 31'. 5''.$ Queritur C B S.



$$\begin{array}{r}
 BC \ 24^{\circ}. 47'. 4''. \quad L. \ 869395. \\
 SC \ 17. \ 31. \ 54. \quad + 1152349. \quad S. \\
 \hline
 - \ 282954. \\
 53^{\circ}. \\
 37. \ SBC:
 \end{array}$$

PROPOS. II. Quadrantaliū.

In Triangulis Sphericis Quadrantalibus Logarithmus INTERMEDIÆ aequatur aggregato ex Antilogarithmis OPPOSITARUM EXTREMARUM.

RATIO. Sinus enim Rectus complementi alterius extremæ, se habet ad Sinum Rectum Intermediæ, ut Sinus Totus ad Sinum Rectum reliquæ extremæ.

Quare in quocunq; Triangulo Sphærico Quadrantali datis trium partium non contiguarum duabus, habetur reliqua per casus duos sequentes.

CASUS I.

Datis EXTREMIS OPPOSITIS
habetur

Logarithmus
INTERMEDIÆ

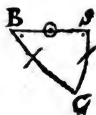
ii 3

ADDEN.

TRIGONOMETRIÆ ADDENDO illorum Antilogarithmos.

EXEMPL.

In priori Triangulo BSC ad C Quadrantali
dantur BC 24°. 47. 4". & SC 17°. 31. 5"4. Quæ-
ritur BS.



$$\begin{array}{r} BC \ 24^{\circ}. 47. 4''. \quad AL. \ 96631. \\ CS \ 17. \ 31. \ 54. \quad AL. \ 47563. \quad A. \\ \hline L. \ 144194. \\ 59^{\circ}. 57. 5''4. \\ 30. \ 2. \ 6. \quad BS. \end{array}$$

CASUS II.

Datâ EXTREMAR. OPPOSITAR. alterâ
& INTERMEDIA;
habetur

Logarithmus

EXTREMAR. OPPOSITAR. reliquæ,
SUBTRAHENDO à Logarithmo intermedix, Antilo-
garithmum Extremæ datæ.

EXEMPL.

In priori Triangulo BSC ad C Quadrantali
dantur SC 17°. 31. 5"4. & CBS 37°. Quæritur BS.



$$\begin{array}{r} CS \ 17^{\circ}. 31. 5''4. \quad L. \ 1199872. \\ c. CBS \ 53. \quad AL. \ 507805. \quad S. \\ \hline AL. \ 692067. \\ 59^{\circ}. 57. 5''2. \\ 30. \ 2. \ 8. \quad BS. \end{array}$$

CAPUT

CAPUT IV.

De

TRIGONOMETRIA NON-QUADRANTALIVM MISCELLANEOIVM.

Absolutâ Trigonometriâ Quadrantalium, restat Non-Quadrantalium.

In Non-Quadrantalibus Triangulis Sphæricis, itidem ut in Planis Obliquangulis, quatuor partes in quæstionem veniunt, quarum tres dantur, quarta quæritur.

Sufficiunt ergo tres ad summum partes ad reliquarum cognitionem comparandum : nisi fortè trium datarum, quarum una alteri opponitur, tertia sit Quadranti propinquior, quam altera ejusdem generis data. In hoc enim casu requiritur etiam *dari species partis*, quæ tertiæ opponitur, ut reliquæ sciantur.

Partes porrò tres datæ aut miscellanæ sunt aut puræ. Miscellanæ sunt, quarum una est diversi generis à reliquis duabus.

Ut cum dantur duo latera & angulus aliquis : aut duo anguli cum latere aliquo.

Dantur enim :

1. Aut duo Latera & Angulus interjacens :
2. Aut duo Latera & Angulus alteri illorū oppositus :
3. Aut duo Anguli, & Latus interjacens.
4. Aut deniq; Anguli duo, & Latus alteri illorum oppositum.

Ut au-

Ut autem Data variant, ita ex ipsis Datis reliquæ tres partes diversimodè quæruntur.

Nam, in primo ordine, datis nimirum duobus Lateribus & Angulo interjacente, quæri potest & haberi

1. Latus reliquum : 2. Angulorum reliquor. alteruter : 3. Anguli reliqui simul.

In secundo ordine, ex datis duobus Lateribus & Angulo uniorum opposito habetur : 1. Latus reliquum : 2. Angulus reliquo Lateri oppositus : 3. Angulus datis Lateribus interjacens.

In tertio ordine, ex datis duobus Angulis & Latere interjacente, habetur 1. Angulus reliquus : 2. Laterum reliquorum alterutrum : 3. Latera reliqua simul.

In quarto ordine ex datis duobus angulis & Latere uniorum opposito, habetur 1. Angulus reliquus : 2. Latus angulo alteri oppositum : 3. Latus Angulis datis interjacens.

Unde evidens fit duodecim esse Casus Triangulorum Non-Quadrantalium Miscellaneorum, de quibus in genere hic duo adhuc submonenda sunt:

I. Omnium Ordinum plerag, exempla expediri per resolutionem Non-Quadrantalium Trianguli in duo Quadrantalia, per ductum Perpendiculi.

Ducitur id à termino Lateris dati eo, in cuius reliquo termino est angulus datus, & cadit quidem intra Triangulum ad Basin, si anguli ad Basin sint ejusdem speciei : extra verò, si diversæ.

II. In secundi & quarti ordinis exemplis nonnullis requiri etiam ut pra-

ut *præter data*, species *unius atq; alterius in quæstionem venientium* partium *etiam* dentur.

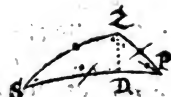
Quæ omnia in seqq. Exemplis eorumq; Praxibus commodissime apparebunt.

CASUS I.

Datis Duobus LATERIBUS & AN-
GULO INTERJACENTE,
quæritur
LATUS reliquum.

EXEMPLUM.

In Triangulo *SZP* Non-Quadranta-
li dantur latera *SP* $78^{\circ} 41'$. *ZP*. 37° . &
Angulus interjacens *ZPS* $48^{\circ} 47'$. Quæ-
ritur latus *ZS*.



Per resolutionem Trianguli dati in duo Qua-
drantalia.

Perpendiculum *ZP* ducatur ex Angulo *Z*, à puncto *Z* ni-
mirum, extremo uno *ZP* dati, in cuius extremo altero est An-
gulus datus: id Perpendiculum dividet latus *SP* alterum da-
tum in duo segmenta *SD* & *DP*, ipsumq; adeò Triangulum
SZP Non-Quadrantale in duò alia *SZD* & *ZPD* ad *D* Qua-
drantalia: in quorum isto quærenda *ZD* & *DP*, in illo *SZ* per
calculus sequentem.

c. *ZP*. 53° . AL. 507805.

c. *ZPD*. $41. 13$. AL. 284722. A.

L. 792527.

$26^{\circ} 55. 2''$. *ZD*.

Kk

c. *ZPD*.

$$\begin{array}{rcl} \text{c. ZPD. } 41^{\circ}. 13. & + & 132449. \\ \text{ZD. } 26. 55. 2'' & + & 677851. \text{ A.} \end{array}$$

$$\text{L. } 810300.$$

$$26^{\circ}. 24. 2''1. \text{ DP.}$$

$$78. 41. 0. \text{ SP.}$$

$$52. 16. 39. \text{ SD.}$$

$$\text{ZD. } 26^{\circ}. 55. 2'' : \text{AL. } 114669.$$

$$\text{SD. } 52. 16. 39. \text{AL. } 491288. \text{ A.}$$

$$\text{L. } 605957.$$

$$33^{\circ}. 3. 4''4.$$

$$56. 56. 16. \text{ ZS.}$$

Non difficilior erit ratio calculi, siue Perpendicularum extra Triangulum cadat, siue Quadrans arcus pro conditione Datorum ducatur.

CASUS II.

Datis I I S D E M

quæritur

ANGULORUM reliquor. ALTERUTER.

EXEMPLA.

I. In priori Triangulo ZSP, si ex iisdem datis quærendus sit Angulus ZSP: quærantur primò in Quadrantali DZP perpendicularum ZD & Latus DP ut prius, deinde in altero Quadrantali SZD ex ZD & SD angulus quæsitus ZSD sic:

$$\text{SD } 52^{\circ}. 16. 3''9. \text{ L. } 234479.$$

$$\text{ZD } 26. 55. 2. + 677851. \text{ S.}$$

$$- 443372.$$

$$32^{\circ}. 41. 4''2. \text{ ZSP.}$$

II. Si verò ex iisdem datis quæri debeat Angulus SZP, quæritur ptimum, præter ZD & DP, Angulus DZP calculo sequenti:

Z D.

ZD $26^{\circ} 55' 2''$. L. 792520.

DP 26. 24. 21. + 700109. S.

+ 92411.

$42^{\circ} 21' 2'' 3$.

47. 38. 37. DZP.

Deinde ex inventis ZD & SD quæritur Angulus SZD,
cui si addatur DZP, cognitus erit, qui quæritur Angulus SZP.

ZD $26^{\circ} 55' 2''$. L. 792520.

SD 52. 16. 39. — 256810. S.

+ 1049330.

$19^{\circ} 17' 5'' 6$.

70. 42. 4. SZD.

47. 38. 37. DZP.

118. 20. 41. SZP

Nisi autem operationes Casus præcedentis jam in promptu essent, apparet quatuor hic operationibus opus esse, pro unius anguli investigatione: quo labore tamen interim ex casu sequenti uterq; habetur Angulus juxta dispositionem Clarissimi Viri HENR. BRIGGHII Mathematici Londinensis. *Tract. de Constr. Canon. annotat. p. 61.*

CASUS III.

Datis I I S D E M

quæruntur

ANGULI duo reliqui,

Perficitur hoc absq; reductione Trianguli Non-Quadrantal-
tis in Quadrantalia duo, praxi sequenti:

Ad Differentialem complementi Semianguli dati, ad-
de Antilogarithmum Semidifferentiæ crurum, &

Kk 2

ab ag-

ab aggregato subtrahe Antilogarithmum Semisummæ eorundem, & habebis Differentialem Semisummæ Angulorum quæditorum. Deinde ad eundem etiam Differentialem complementi Semianguli dati adde etiam Logarithmum Semidifferentiæ Crurum, & ab aggregato subtrahe Logarithmum Semisummæ eorundem, prodibitq; iterum Differentialis Semidifferentiæ Angulor. quæditorum. Hanc deniq; ita inventam Angulorum Semidifferentiam adde ad Semisummam eorund. prius inventam, habebisq; Angulum è quæsitis majorem: subtrahe illam ab hac, prodibit minor.

RATIO. Ut enim 1. Sinus complementi Semisummæ crurum ad Sinum complementi Semidifferentiæ crurum, ita Tangens complementi Semianguli dati, ad Tangentem Semisummæ Angulorum ad Basin. Deinde ut Sinus Semisummæ crurum ad Sinum Semidifferentiæ eorund. ita Tangens complementi Semianguli dati, ad Tangentem Semidifferentiæ Angulorum ad Basin.

EXEMPL.

In Priori Triangulo *SPZ* ex datis etiam prioribus quærantur Anguli *SPZ* & *ZSP*.

ZPS $48^{\circ}.47''.00$
 dimid. 24. 23. 30. II. V.
 compl. 65. 36. 30. — 790882.

Crus *ZP* 37.

SP 78. 41.

Summ. Cr. 115. 41.

VI.

III.

Semis. 57. 50. 30. L. 166550. AL. 630622.
 differ.

differ. Cr. 41. 41. IV. I.
Semidiff. 20. 50. 30. L. 1033424. AL. 67672.

AL. 67672.

— 790882. A.

— 723210.

AL. 630622. S.

— 1353832.

Semifumm. Ang. $75^{\circ} 31' 1''$.

$75^{\circ} 31' 1''$.

$42. 49. 30.$

PZS. 118. 20. 42.

ZSP. 32. 41. 42.

L. 1033424.

— 790882. A.

+ 242542.

L. 166550. S.

+ 75992.

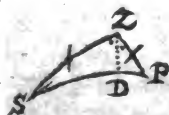
Semidiff. Ang. $42^{\circ} 49' 3''$.

CASUS IV.

Datis duobus LATERIBUS & ANGU-
LO uni eor. OPPOSITO,
quæritur
LATUS reliquum.

EXEMPL.

In Triangulo SZP dantur Latus SZ
 $56^{\circ} 56' 1''$. ZP 37° . & Angulus huic op-
positus ZSP $32^{\circ} 41' 4''$. Quæritur latus
reliquum. SP.



Per resolutionem Trianguli dati in duo Quadran-
talia & calculum sequentem.

c. ZSD $57^{\circ} 18' 1''$. AL. 615877.

c. ZS 33. 3. 44. AL. 176643. A.

792520.

$26^{\circ} 55' 2''$. PD.

Kk 3

c. ZSD

c.ZSD. $57^{\circ}.18.1''8$. L. 172500.
 c.ZS. 33. 3. 44. + 429319. S.

— 256819.

$52^{\circ}.16.40$. SD.

c.ZP. 53° . L. 224851.

ZD. $26.55.2''$. AL. 114669. S.

AL. 110182.

$26^{\circ}.24.2''0$. PD.

78. 41. 0. SP.

CASUS V.

Datis I I S D E M

quæritur

ANGULUS reliquo Lateri OPPOSITUS.

Requiritur hic data etiam species Anguli quæsitæ, & perficitur operatio processu calculi sequentis;

Logarithmi Anguli & Lateris contiguorum colliguntur in unam summam, & ab aggregato subtrahitur Logarithmus Lateris reliqui: residuum est Logarithmus Anguli quæsitæ.

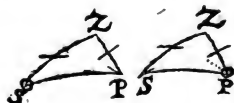
RATIO. Sinus enim Laterum, Sinibus oppositor. Angulorum directè sunt Proportionales.

Atq; in hujus casus Exemplis requiritur species Anguli quæsitæ.

EXEMPLA.

I. In Triangulo appposito ZPS dantur Latus ZS Quadranti propinquius $56^{\circ}.56.1''6$. Angulusq; ZPS ei oppositus $48^{\circ}.47$. Latus etiam ZP 37° .

Quæritur Angulus ZSP ei oppositus Acutus.



ZP 37° .

ZP. 37° . L. 507805 .

ZPS. 48.47 . L. 284722 . A.

aggreg. L. 792527 .

ZS $56.56.16$. L. 176643 . S.

resid. L. 615884 .

$32^{\circ}.41.4''$. ZSP.

II. In Triangulo appposito ZPS dantur iterum Latus ZP Quadranti minus propinquum 37° . subtendens Angulum ZSP datum $32^{\circ}.41.4''$. & Latus SZ Quadranti propinquius $56^{\circ}.56.16$. oppositum Angulo quæsito ZPS qui insuper speci- ei datur Acutæ.

ZS. $56^{\circ}.56.16$. L. 176643 .

ZSP. $32.41.41$. L. 615884 . A.

aggr. L. 792527 .

ZP. 37 . L. 507805 . S.

resid. L. 284722 .

ZPS. $48^{\circ}.47$. quia Acutus.

131.13 . si fuisset Obtusus.

CASUS VI.

Datis I I S D E M

quæritur

ANGULUS à datis LATERIBUS

INTERCEPTUS.

EXEMPL.

In Triangulo ZSP dantur iterum, ut in Exemplo primo casus proximè præcedentis Latera ZS, ZP & Angulus ZPS il- li oppositus. Quæritur Angulus PZS à datis Lateribus inter- ceptus.

Resoluto Triangulo iterum in duo Quadrantalia, quæ- rantur

runtur primò in Triangul ZPD Angulus PZD & Latus ZD:
deinde in Triangul. ZSD Angulus SZD, calculo sequenti:

Ex ZP & ZPD in primo Casu inventum est Perpendicularum
ZD $26^{\circ}. 55'. 2''$. Restat PZD.

$$\begin{array}{r} \text{c. ZP } 53^{\circ}. \quad - \quad 282954. \\ \text{ZD } 26. 55. 2''. \quad + \quad 677851. \text{ A.} \\ \hline \text{L. } 394897. \\ 42^{\circ}. 21. 2''. \\ 47. 38. 35. \text{ PZD.} \end{array}$$

$$\begin{array}{r} \text{c. SZ } 33^{\circ}. 3'. 44. \quad + \quad 429319. \\ \text{ZD } 26. 55. 2. \quad + \quad 677851. \text{ A.} \\ \hline \text{L. } 1107170. \\ 19^{\circ}. 17. 54. \\ 70. 42. 6. \text{ SZD.} \\ 47. 38. 35. \text{ PZD.} \\ \hline 118. 20. 41. \text{ SZP,} \end{array}$$

CASUS VII.

Datis duobus ANGULIS & LATERE
INTERJACENTE
quæritur
ANGULUS reliquus.

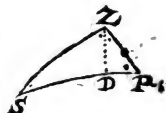
In hoc etiam Casu instituitur reductio Trianguli dati in
duo Quadrantalia.

EXEMPLI.

In Triangulo appposito ZPS dantur duo
Anguli SPZ $118^{\circ}. 20. 4''$. & ZPS $48^{\circ}. 47$.
cum latere interjecto ZP. 37° . Quæritur re-
liquus Angulus ZSP.

Perpendicularum DZ ex superioribus notum est $26^{\circ}. 55'. 2''$.
Quærantur saltem PZD & ZSD.

c. ZP.



c. ZP. 53°. L. 224851.

c. ZPD. 41. 13. + 122449. S.

+ 92402.

42°. 21. 2" 4.

47. 38. 36. DZP.

118. 20. 41. PZS.

70. 42. 5. SZD.

ZD 26°. 55. 2". AL. 114669.

c. SZD 19. 17. 55. AL. 57832.

L. 172501.

57°. 18. 1" 8.

32. 41. 42. ZSP.

CASUS VIII.

Datis IISDEM

quæritur

LATERUM reliquor. ALTERUTRUM.

EXEMPLA.

I. Quærat in priori Schemate ex prius datis, Latus ZS.
Nota sunt ZD & PZD, uti & DZS: restat ZS.

c. SZD 19. 17. 55. L. 1107174.

PD 26. 55. 2. + 677851. S.

+ 429323.

33°. 3. 45.

56. 56. 15. SZ.

II. Ex datis ijsdem quærat Latus SP. Quæritur ergo primum Perpendicularum ZD & segmenta lateris quæsitæ PD, & SD, quæ omnia superius jam vidimus.

LI

CASUS

Idem hic calculus est, qui superius erat Casus Tertij, paucis mutatis.

Differentialis enim Semibasis additur ad Antilogarithmum Semidifferentiæ Angulorum, & ab aggregato subtrahitur Antilogarithmus Semisummæ eorundem, proditq; Semisummæ crurum Differentialis. Deinde idem Differentialis Semibasis additur Logarithmo Semidifferentiæ Angulorum, & ab aggregato subtrahitur Logarithmus Semisummæ eorundem, & prodit Differentialis Semidifferentiæ crurum. Quæ duo inventa iterum addita, & invicem subtracta, exhibent crura quæ sita.

R A T I O. Ut enim Sinus complementi Semisummæ Angulorum, ad Sinum complementi Semidifferentiæ eorundem; ita Tangens Semibasis ad Tangentem Semisummæ crurum. Et ut Sinus Semisummæ Angulorum, ad Sinum Semidifferentiæ eorundem; ita Tangens Semibasis ad Tangentem Semidifferentiæ crurum.

Exemplum prioris Schematis, eorundemq;
datorum.

Basis ZP	37° .	II. V.
Semibasis	$18. 3'0.$	$+ 1094832.$
Ang. SZP	$118. 20. 4''2.$	
ZPS	$48. 47.$	

Summ.

Summ.	167. 7. 42.	VI.	III.
Semisumm.	82. 33. 51.	L. 6322.	AL. 2188449.
differ.	69. 33. 42.	IV.	I.
Semidiff.	34. 46. 51.	L. 561349.	AL. 196818.
AL. 196818.		L. 561349.	
+ 1094833. A.		+ 1094833. A.	
+ 1291651.		+ 1656182.	
AL. 2188449. S.		L. 6323. S.	
— 896798.		+ 1649859.	
Semis. Ang. 67°. 48. 3"9.		Semidiff. Ang. 10°. 52. 2"2.	
67°. 48. 3"9.			
10. 52. 22.			

78 41. 1. SP.

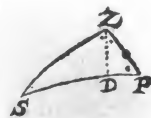
56. 56. 17. ZS.

CASUS X.

Datis duobus ANGULIS & LATERE
uni eorum OPPOSITO,
quæritur
ANGULUS reliquus.

EXEMPL.

In Triangulo ZPS dantur Anguli ZSP
 $32^\circ. 41. 4''2.$ & $ZPS 48^\circ. 47.$ cum latere ZS an-
gulo isti opposito $56^\circ. 56. 1''6.$ Quæritur an-
gulus PZS .



Expeditur hoc per resolutionem Trianguli dati in duo
Quadrantalia : atq; Perpendicularum ZD jam notum est $26^\circ.$
 $55. 2''.$ Quærentur ergò saltem Anguli SZD & DZP qui uter-
que simul sumti quæsitum constituunt. Sed & ex Casûs sexti o-
peratione ultimâ ex SZ & PZ inventus est Angulus $SZP 70^\circ.$
 $42. 6''.$ & ex operatione prima Exempl. II. Caf. II. ex ZD & DP

LI 2

Angu-

Angulus DZP $47^{\circ}.38.37$. Erit ergò Angulus quæsitus SZP $118^{\circ}.20.43$.

CASUS XI.

Datis IISDEM

quæritur

LATUS Angulo alteri OPPOSITUM.

Hic quoq; opus est ut sciatur species Lateris quæsitæ, Calculusq; idem est qui Casus Quinti.

Logarithmi enim Anguli & Lateris contiguorum adduntur, & ab aggregato subtrahitur Logarithmus reliqui Anguli.

EXEMPL.

I. In appposito Schemate dentur eadem, quæ prius, quærat autem Latus ZP .



$$SZ. 56^{\circ}.56.16. L. 176643.$$

$$ZSP 32. 41. 42. L. 615884. A.$$

$$\text{aggr. } L. 792527.$$

$$ZPS 48. 47. L. 284722. S.$$

$$\text{resid. } L. 507805.$$

$$37^{\circ}. ZP.$$

II. In altero Schemate dentur Anguli $ZPS 48^{\circ}.47$. $ZSP 32^{\circ}.41.42$. Latusq; huic oppositum $ZP 37^{\circ}$. Quæritur Latus SZ alteri angulo oppositum, cuius species datur Quadrante Minor

$$ZP 37^{\circ}. L. 507805.$$

$$ZPS 48. 47. L. 284722. A.$$

$$\text{aggr. } L. 792527.$$

$$ZPS 32. 41. 42. L. 176643. S.$$

$$\text{resid. } L. 615884.$$

$$56^{\circ}.56.16. SZ.$$

CASUS

CASUS XII.

Datis I I S D E M

quæritur

LATUS Angulis datis INTERJACENS.

EXEMPL.

In Schemate Priori dentur Anguli qui prius in Casu X. S nimirum & P cum Latere SZ. Quæritur latus P S Angulis datis interjacens, eo processu ut primo investigetur Perpendicularum Z D, deinde S D, tertio DP, &c.

CAPUT V.

De

TRIGONOMETRIA NON-QUADRANTALIBUS Purorum.

IN Non-Quadrantalibus Partes datæ dicuntur Puræ, cum aut tria Latera dantur, aut tres Anguli: quærunturq; ibi Anguli, hic Latera.

Sunt itaq; hîc in universum duo casus, quos ordine videre lubet.

CASUS I.

Datis tribus LATERIBUS

quæritur

ANGULORUM quivis.

Angulus quæsitus ponitur quasi in vertice Trianguli, quemcunq; alias situm obtineat, diciturq; Latus ei oppositum *Basis*, reliqua ejusdem *Crura*: absolviturq; operatio per sequentem Regulam.

REGULA. Summa ex Logarithmis Crurum subducta à summa ex Logarithmis aggregati & differentia Se-

LI 3

miba-

mibasis & Semidifferentiæ crurum, relinquit duplum Logarithmi dimidij Anguli verticalis.

RATIO. Quia ut Rectangulum sub Sinibus Rectis Crurum se habet ad Quadratum Sinus Totius; ita Rectangulum factum ex Sinibus Rectis aggregati & differentiæ Semibasis & Semidifferentiæ Crurum se habebit ad quadratum Sinus Recti dimidij Anguli verticalis.

PRAXIS.

In Triangulo ZPS dantur Latera omnia PZ 37°. ZS 56°. 5'6. 1"6, & SP 78°. 41. Quæritur Angulus PZS.



Crus ZP 37°.	Basis SP 78°. 41.
ZS 56. 5'6. 1"6.	Semif. 39. 20. 30.
differ. 19. 56. 16.	Sem.cr. 9. 58. 8.
Semidiff. 9. 58. 8.	aggr. 49. 18. 38. L. 276737.
	resid. 29. 22. 22. L. 712351.
	aggr. L. 989088.
ZP 37°.	L. 507805.
ZS 56. 5'6. 1"6.	L. 176643. A.
	aggr. L. 684448.
	reliq. L. 304640.
	dimid. L. 152320.
	59°. 10. 2"1.
	118. 20. 42. SZP.

Reliqui Anguli aut eodem modo, aut per præcedentia habentur.

CASUS II.

Datis tribus ANGULIS
quæritur
LATERUM quodvis.

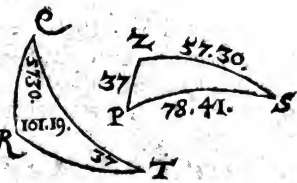
Anguli

Anguli dati convertuntur in latera : assumtis tamen prius pro unico quovis angulo & suo subtendente Latere suis complementis ad Semicirculum.

EXEMPLI.

Trianguli QRT dantur tres Anguli Q $57^{\circ}.30'$. T 37° . R 101° .

19. Quarantur Latera.

Sumatur primò pro angulo quovis, exempli gratià, pro R c. R  101.19 . deinde fiat Triangulum appositum PZS in quo ZP sit 37° . ZS $57^{\circ}.30'$. & PS $78^{\circ}.41'$. Ita Angulus ZPS Trianguli hujus erit illius Latus QR : hujus Angulus ZPS erit illius latus RT : & Angulus PZS hujus, erit illius Latus QT. Datisigitur Trianguli PZS lateribus, facili negotio per Casum I. hujus Cap. Angulum quemvis habebis, &, per præcedentia, Angulos reliquos, qui, ut ostensum est, singulis dati Trianguli QRT lateribus correspondent.

Talis ergò etiam est Trigonometria Sphæricorum, XVIII. omninò Casibus constans, & eadem facilitate calculi decurrens, cujus Epitomen quandam in sequenti Capitulum repetitione subjungo.

TRIANGULORUM

Sphæricorum.

QUADRANTALIUM.

- I. *Datis Extremis Circumpositis habetur Intermedia. Per I. Cas. Prop. I. p. 252.*
- II. *Data Extremar. Circumpositar. unâ & Intermedia, habetur Circumpositar. altera. Per Cas. II. Prop. I. p. ead.*

III. Da-

III. Datis Extremis Oppositis habetur intermedia. Per Cas. I. Prop. II. p. 253.

IV. Datis Extremar. Oppositarum una & Intermediâ, habetur Oppositar. altera. Per Cas. II. Prop. II. p. 254.

In NON-QUADRANTALIBUS verò

V. Datis duobus Lateribus & Angulo interjacente habetur Latus reliquum. Per Cas. I. Non-Quadr. miscell. p. 257.

VI. Datis Iisdem, habetur Angulor. reliquor. Alteruter. Per Cas. II. p. 258.

VII. Datis Iisdem, habentur Anguli duoreliqui. Per Cas. III. p. 259.

VIII. Datis duobus Lateribus & Angulo uni eor. Opposito, habetur Latus reliquum. Per Cas. IV. p. 261.

IX. Datis Iisdem, habetur Angulus reliquo Lateri Oppositus. Per Cas. V. p. 262.

X. Datis Iisdem, habetur Angulus à datis Lateribus interceptus. Per Cas. VI. p. 263.

XI. Datis duobus Angulis & Latere interjacente, habetur Angulus reliquus. Per Cas. VII. p. 264.

XII. Datis Iisdem, habetur Laterum reliquor. Alterutrum. Per Cas. VIII. p. 265.

XIII. Datis Iisdem habentur Latera duoreliqua. Per Cas. IX. p. 266.

XIV. Datis duobus Angulis & Latere uni eorum Opposito, habetur Angulus reliquus. Per Cas. X. p. 267.

XV. Datis Iisdem, habetur Latus Angulo alteri Oppositum. Per Cas. XI. p. 268.

XVI. Datis Iisdem, habetur Latus Angulis datis Interjacens. Per Cas. XII. p. 269.

XVII. Datis tribus Lateribus habetur Angulorum quivis. Per Cas. I. Non-Quadrantal. Puror. p. 269.

XIIX. Datis tribus Angulis habetur Laterum quodvis. Per Cas. II. p. 270.

F I N I S.

BENJAMINIS URSINI
SPROTTAVI SILESI

Mathematici Electoralis Brandenburgici

MAGNVS CANON

TRIANGULORUM LOGARITHMICVS;

Ex Voto & Consilio

Illustr. NEPERI, p. m.
novissimo,

Et Sinu toto 100000000. ad scrupulor.
secundor. decadas
usq;

Vigili studio & pertinaci industria
deductus.

KEPPLER. *Harmonic. Lib. IV. cap. VII. p. 168.*

GENERA quidem Mathematica, non sunt aliter in Animâ, quàm Universalia cetera, conceptusq; varij, abstracti à sensibilibus: ac SPECIERUM Mathematicarum illa, quæ Circulus dicitur, longè aliâ ratione inest Animæ, non tantum ut Idea rerum externarum, sed etiam ut forma quædam ipsius Animæ; deniq; ut promptuarium unicum omnis Geometricæ & Arithmeticæ scientiæ; quorum illud in doctrina sinuum, hoc in mirabili Logarithmorum negotio est evidentissimum; ut in quibus ex Circulo ortis, abacus quidam inest omnium multiplicationum & divisionum, quæ unquam fieri possunt, veluti jam confectarum.

COLONIÆ,

Typis Georgij Rungij, impensis & sumtibus Martini Guttij
Bibliopolæ, Anno M. DC. XXIV.

Grad. o.

+ | —

M. S.	Sinus.	D.	Logarith.	Differ.	Different.	D. Logar.	D.	Sinus.
0	0	4848	Infinitum.		Infinitum.		0	0000 60
10	4848		993433101	69314718	993433101		0	0000 50
20	9696		924118383	40546520	924118383	718	0	0000 40
30	14544		883571863	28768198	883571862	521	1	9999 30
40	19392	49	54803665	12314358	54803663	199	2	9998 20
50	24241	48	32489307	18232161	32489304	359	3	9997 10
1	29089		14257146	15415061	14257142	162		
10	33937		798842085	13353136	798842079	063	4	9996 059
20	38785		85488949	11778304	85488941	138	6	9994 50
30	43633		73710645	10536053	73710635	306	8	9992 40
40	48481		63174592	9531019	63174580	055	10	9990 30
50	53329	49	53643557	8701141	53643559	021	12	9988 20
2	58178	48	44942432	8004266	44942415	144	14	9986 10
10	63026		36938166	7410793	36938146	269	3	9983 058
20	67874		29527373	6899331	29527350	796	17	9980 50
30	72722		22628042	6453803	22628016	334	20	9977 40
40	77570		16174239	6062470	16174209	807	26	9974 30
50	82418		10111769	5715832	10111735	474	30	9970 20
3	87266	49	04395937	5406710	04395899	836	34	9966 10
10	92115	48	698989127	5129341	698989185	714	4	9974 30
20	96963		93859886	4879012	93859839	346	6	9970 20
30	101811		88980174	4652005	88980122	017	8	9966 10
40	06659		84328869	4445162	84328812	010	38	9962 057
50	12507		79883707	4255976	79883645	167	42	9958 50
4	16355	49	75627731	4082176	75627663	981	47	9953 40
10	21103	48	71545555	3922087	71545482	017	52	9948 30
20	26051		67623468	3774030	67623389	010	57	9943 20
30	30900		63849438	3636760	63849352	167	62	9938 10
40	35748	49	60212678	3509127	60212586	981	68	9932 056
50	40596	48	56703551	3390201	56703452	181	73	9927 50
5	45444		53313350	3278928	53313244	093	79	9922 40
10	50292		50034422	3174871	50034309	037	86	9914 30
20	55140		46859551	3077172	46859431	766	91	9908 20
30	59988	49	43782380	2985295	43782252	134	99	9901 10
40	64837	48	40797085	2898755	40796949	208	106	9894 055
50	69685		37898330	2817073	37898186	935	113	9887 50
60	74533		35081257		35081105	878	120	9880 40
						179	8	9872 30
						303	136	9864 20
						763	144	9856 10
						081	152	9848 054

Grad. 89.

S.M.

Grad. o.

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M S	Sinus	D.	Logarith.	Differ.	Different.	D.	Logar.	D.	Sinus
6	0 174533	48	635081237	2739894	635081205	903	152	9	98450
	10 79381		2341363	666812	2341202	821	161		98350
	20 84229		619674551	597556	629674381	565	170		98340
	30 89077		7076995	531780	7076816	789	179		98110
	40 93925		4545215	469255	4545027	265	188	10	98120
	50 98773	49	2075960	409752	2075762	761	198	9	98010
7	0 103622	48	619666208	353048	619666001	058	207	10	9791053
	10 08470		7313160	298952	7312943	963	217	11	97850
	20 13318		5714208	247270	5713980	280	228	10	97720
	30 18166		2766938	197887	2766700	898	238	11	97620
	40 23014		0569051	150628	0568802	639	249		97510
	50 27862		608418423	105342	608418163	353	260		974010
8	0 32710		6313081	061922	6312810	933	271		9729052
	10 37558	49	4251159	020149	4250877	261	282	12	971850
	20 42407	48	2230917	1980179	2230616	291	294		970640
	30 47255		0250631	941802	0250325	814	306		969430
	40 52103		598308829	904809	598308511	825	318		968210
	50 56951		6404020	869214	6403690	127	330	13	967010
9	0 61799		4534806	834909	4534463	921	343		9657051
	10 66647		2699897	801845	2699541	858	356		964450
	20 71495		0898052	769953	0897683	966	369		963140
	30 76343	49	589128099	739167	589127717	180	382		961830
	40 81192	48	7388932	709442	7388537	456	395	14	960510
	50 86040		5679490	680752	5679081	766	408		959110
10	0 90888		3998738	652884	3998315	898	423		9577050
	10 95736		2345854	626037	2345417	052	437	15	956350
	20 100984		0719817	600035	0719365	049	452	14	954840
	30 05432		579119782	574829	579119316	844	466	15	953430
	40 10280		7544953	550398	7544472	414	481	16	951920
	50 15128		5994555	526765	5994058	780	497	15	950310
11	0 19976	49	4467790	503776	4467278	792	512	16	9488049
	10 24825	48	2964014	481511	2963486	527	528		947250
	20 29673		1482503	459879	1481959	895	544		945640
	30 34521		0022624	438868	0022064	884	560		944030
	40 39369		568583756	418450	568583180	466	576		942420
	50 44217		7165306	398615	7164714	632	592	17	940810
60	49065		5766691		5766082		609		9391048

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M. S.	Sinus.	D.	Logarith.	Differ	Different.	Diff.	Logar.	D	Sinus.	
12	0		565766691	1379322	565766082		609		0	9391 60
10			4387369	60563	4386743	9339	626	17	0	9374 50
30			3026806	42298	3026162	0581	644	18	0	9356 40
30	63609	49	1684508	14505	1683847	3315	661	17		9339 30
40	68458	48	0360003	07112	0359324	4523	679	18		9321 20
50	73306		559052791	1290335	559052094	7230	697			9303 10
13	0		7761456	73899	7761741	0353				
10			6488557	57872	6487824	3917	715			9285 047
30	87850		5230685	42245	5229933	7891	733	19		9267 50
30	92698		3988440	27000	3987669	1264	752			9248 40
40	97946		2761440	12130	2760650	7019	771	20		9229 30
50	102394		1549310	1197613	1548500	2150	790	20		9210 20
14	0		0351697	83444	0350868	7632	810	19		9190 10
10	12090	49	549168253	69194	549167404	3464	829	20		9171 04
20	16939	48	7998659	56076	7997790	9614	849	21		9151 50
30	21787		6842383	42865	6841693	6097	869			9131 40
40	26635		5699718	29944	5698808	2885	890	20		9110 30
50	31483		4569774	17316	4568843	9965	910	21		9090 20
15	0		3452458	04980	3451506	7337	931			9069 10
10	41179		2347478	1092896	2346505	5001	952	20		9048 045
20	46027		1254582	81083	1253587	2918	973	22		9027 50
30	50875		0173495	69534	0172483	1104	995	21		9005 40
40	55723		539103961	58206	539102927	9556	1016	22		8984 30
50	60571		8045765	47131	8044704	8223	038	23		8962 20
16	0		6998634	36260	6997551	7153	061	22		8939 10
10	70267	49	5962374	25651	5961268	6283	083	23		8917 044
20	75116	48	4936723	15225	4935594	5674	106			8894 50
30	79964		3921498	05012	3920346	5248	129			8871 40
40	84812		2916486	995026	2915311	5035	152			8848 30
50	89660		1921460	85241	1920263	5050	175	24		8825 20
17	0		0936219	75598	0934996	5265	195			8801 10
10	99356		529960621	66192	529959374	5622	213	25		8777 042
20	104204		8994429	56930	8993158	6216	247			8753 50
30	09052		8037499	47867	8036203	6955	271			8729 40
40	13900		7089632	38966	7088311	7892	296			8704 30
50	18748		6150666	30235	6149320	8991	321			8679 20
60	23596		5220431		5219060	0160	346			8654 10
							371			8629 042

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Diff.	Logar.	D	Sinus.
18 0	523596		525220431	921654	525219060	1679	1371		8629 60
10	28444	48	4298777	13243	4297381	3268	396	25	8604 50
20	33292		3385535	04958	3384113	4984	422	26	8578 40
30	38141	49	2480577	896874	2479129	6900	448		8552 30
40	42989		1583703	88884	1582229	8911	474	27	8526 20
50	47837	20	0694819	81056	0693318	1082	501	27	8499 10
19 0	52685		519813763	73359	519812336	3386	537	26	8473 04
10	57533		8940404	65795	8938850	5822	554	27	8446 50
20	62381		8074609	58366	8073028	8394	581	28	8419 40
30	67229		7216243	51062	7214634	1089	609	27	8391 30
40	72077		6365181	43876	6363545	3904	636	28	8364 20
50	76925		5521305	36817	5519641	6845	664	28	8336 10
0	81773		4684488	29871	4682796	9900	692	19	8308 04
10	86621		3854617	23044	3852896	5072	721	28	8279 50
20	91469		3031573	16319	3029824	6348	749	29	8251 40
30	96317		2215254	09703	2213476	9732	778		8223 30
40	001165		1405551	03213	1403744	3242	807		8193 20
50	05013		0602338	796808	0600502	6838	836	30	8164 10
21 0	10861		509805530	90503	509803664	0533	866		8134 03
10	15709		9015027	84311	9013132	4341	896		8104 50
20	20557	49	8230716	78198	8228790	8228	926		8074 40
30	25406	48	7452518	72194	7450562	2224	956		8044 30
40	30254		6680324	66288	6678338	6319	986	31	8014 20
50	35102		5914036	60452	5912089	0483	1017		7983 10
22 0	39950		5153584	54708	5151536	4739	048		7952 03
10	44798		4398876	49052	4396797	9083	079		7921 50
20	49646		3649824	43491	3647714	3523	110	32	7890 40
30	54494		2906333	38004	2904191	8036	142		7858 30
40	59342		2168329	32596	2166155	2628	174		7826 20
50	64190		1435733	27267	1433527	7299	206		7794 10
23 0	69035		0708466	22014	0706228	2047	238	33	7761 03
10	73886		499986452	16838	499984181	6870	271	32	7729 50
20	78734		9269614	11732	9267311	1765	303	33	7697 40
30	83582		8557882	06709	8555546	6736	336	34	7664 30
40	88430		7851180	01742	7848810	1775	370	33	7630 20
50	93278		7149438	696856	7147035	6890	403	34	7597 10
60	98126		6452582		6450145		437		7563 03

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S.M.

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M.S.	Sinus.	D.	Logarith	Differ.	Different.	Differ.	Logar.	D.	Sinus.	
24 0	698126	+44	496451581	691032	496450145	691066	2437	34	37563	60
10	703974		5760550	87273	5758079	87307	471	34	37529	50
20	07822		5073277	82589	5070772	82614	505	35	7495	40
30	12670		4390688	77956	4388148	77990	540	34	7460	30
40	17518		3712732	73396	3710158	73431	574	35	7426	20
50	22366		3039336	68885	3036727	68920	609	35	7391	10
25 0	27214		2370451	64438	2367807	64474	644	36	7356	035
10	32062		1706013	60049	1703333	60084	680	35	7320	50
20	36910		1045964	55731	1043249	55767	715	35	7285	40
30	41758		0390233	51463	0387482	51499	751	36	7249	30
40	46606		489738770	47244	489735983	47280	787	37	7213	20
50	51454		9091526	43073	9088703	43110	823	37	7177	10
26 0	56302		8448453	38967	8445593	39004	860	37	7140	034
10	61190		7809486	34914	7806589	34951	897	38	7103	50
20	65998		7174572	30901	7171638	30938	934	38	7066	40
30	70846		6543671	26952	6540700	26990	971	38	7029	30
40	75694		5916719	23040	5913710	23077	3009	37	6991	20
50	80542		5293679	19186	5290633	19224	046	37	6954	10
27 0	85390		4674493	15370	4671409	15408	084	38	6916	033
10	90238		4059123	11611	4056001	11650	122	39	6878	50
20	95086		3447512	07891	3444351	07931	161	39	6839	40
30	99934		2839620	04218	2836420	04256	200	38	6800	30
40	04782		2235402	00591	2232164	00630	238	39	6761	20
50	09630		1634811	97003	1631534	97043	277	40	6723	10
28 0	14478		1037808	93461	1034491	93501	317	39	6683	032
10	19326		0444347	89963	0440990	90002	357	39	6643	50
20	24174		479854384	86497	479850988	86537	396	40	6604	40
30	29022		9267887	83077	9264451	83118	436	41	6564	30
40	33870		8684810	79696	8681333	79736	477	41	6523	20
50	38718		8105114	76359	8101597	76400	517	40	6483	10
29 0	43566		7528755	73057	7525197	73098	558	41	6442	031
10	48414		6955698	69788	6952099	69829	599	41	6401	50
20	53262		6385910	66518	6382270	66600	640	41	6360	40
30	58110		5819352	63361	5815670	63407	682	41	6318	30
40	62958		5255987	60208	5252263	60249	724	41	6276	20
50	67806		4691779	56987	4691014	57029	765	43	6235	10
60	72654		4138792		4134985		807		6193	030

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.
30 0	872653	4342	474138692	584002	474134885	554045	3807	43	6193 60
10	77501		3584690	1957	3580840	1000	850		6150 50
20	82349		3033733	547936	3029840	547979	893		6107 40
30	87197	4342	2485797	4938	2481861	4981	936	44	6064 30
40	92045		1940859	1988	1936880	2031	979		6021 20
50	96893		1398871	539084	1394849	539188	4022		5978 10
31 0	901741	4342	0859787	6184	0855721	6228	066	44	5934 029
10	06589		0323603	3318	0319493	3362	110		5890 50
20	11437		69790285	0487	69786131	0531	154		5846 40
30	16285	4342	9259798	527690	9255600	527735	198	45	5802 30
40	21133		8732108	4926	8727865	4970	243		5757 20
50	25981		8207182	2183	8202895	2228	287		5713 10
32 0	30829	4342	7684999	519463	7680667	519509	332	46	5668 028
10	35677		7165536	6774	7161158	6819	378		5622 50
20	40525		6648762	4186	6644339	4172	423		5577 40
30	45373	4342	6134636	1502	6130167	1548	469	46	5531 30
40	50220		5623134	508893	5618619	508939	515		5485 20
50	55068		5114241	6309	5109680	6355	561		5439 10
33 0	59916	4342	4607932	3755	4603325	3802	607	47	5393 027
10	64764		410417	1234	4099523	1281	654		5346 50
20	69612		3602943	498737	3598242	498784	701		5299 40
30	74460	4342	3104206	6265	3099458	6312	748	48	5252 30
40	79308		2607941	3820	2603146	3868	795		5205 20
50	84156		2114121	1397	2109278	1445	843		5157 10
34 0	89004	4342	1622724	488975	1617833	489023	891	49	5109 026
10	93852		1133745	6599	1128810	6647	939		5061 50
20	98700		0647150	4251	0642163	4300	987		5013 40
30	1003547	4342	0162899	1917	0157863	1965	5036	48	4964 30
40	08395		459680982	479595	459675898	479644	084		4916 20
50	13243		9201387	7310	9196254	7360	133		4867 10
35 0	18091	4342	8724077	5044	8718894	5093	183	49	4817 025
10	22939		8249033	2799	8243801	2849	232		4768 50
20	27787		7776234	0578	7770953	0628	282		4718 40
30	32635	4342	7305656	468362	7300324	468412	332	50	4668 30
40	37483		6837294	6184	6831912	6234	382		4618 20
50	42330		6371110	4026	6365678	4077	432		4568 10
60	47178	48	5907084		5901601		483		4517 024

Grad. 89.

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M. S.	Sin.	D.	Logarith.	Differ.	Different.	Differ.	Logar. D.	Sin.
36 0	1047178		455907084		455901601		5483	60
10	52026		5445207	461877	5439673	461928	534	51
20	56874		4985455	459752	4979870	459803	585	60
				7650				40
30	61721		4527805	5566	4522169	7701	636	30
40	66570		4072239	3492	4066551	5618	688	20
50	71418		3618747	1446	3613007	3544	740	10
						1498		
37 0	76266	47	3167301	449429	3161509	449481	792	023
10	81113	48	2717872	7413	2712028	7466	844	50
20	85961		2270459	5417	2264562	5469	897	40
30	90809		4825042	3440	4819093	3493	949	30
40	95657		1381602	1484	1375600	1538	6002	20
50	1100505		0940118	439546	0934062	439599	056	10
38 0	05353		0500572	7618	0494463	7672	109	022
10	10201	47	0062954	5714	0056791	5768	163	50
20	15048	48	44962740	3822	44961022	3876	217	40
30	19896		9193418	1946	9187147	1000	271	30
40	24744		8761472	0089	8755147	0144	325	20
50	29592		8331383	428249	8325003	428304	380	10
39 0	34440		7903134	6422	7896699	6477	435	021
10	39288	47	7476712	4613	7470222	4668	490	50
20	44135	48	7052099	2814	7045554	2870	545	40
30	48983		6629285	1034	6622684	1090	601	30
40	53831		6208251	19269	6201594	19325	657	20
50	58679		5788982	7520	5782269	7576	713	10
40 0	63527	47	5371462	5784	5364693	5841	769	020
10	68374	48	4955678	4058	4948852	4114	826	50
20	73222		4541620	3354	4534738	3411	882	40
30	78070		4129266	0662	4122327	0720	939	30
40	82918		3718604	408980	3711607	409037	997	20
50	87766	47	3309624	7310	3302570	7368	7054	10
41 0	92613	48	2902314	5655	2895202	5713	112	019
10	97461		2496659	4019	2489489	4077	170	50
20	1102309		2092640	2396	2085412	2454	228	40
30	07157		1690244	0788	1682958	0847	286	30
40	12005	47	1289456	399187	1282111	399246	345	20
50	16852	48	0890269	7591	0882865	7650	404	10
60	21700		0492678		0485215		463	018

Grad. 89.

S. M.

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M.S.	Sinus.	D	Logarith	Differ.	Different.	Differ	Logar.	D	Sinus.	
42 °	1211700	48	492678	396015	485215	396074	7463	59	2537	60
10	16548	48	096663	4458	089141	4518	521	60	2478	50
20	31396	47	702205	2913	694623	2973	582	60	2418	40
30	36243	47	309292	1369	301650	1429	642	61	2358	30
40	41091	48	917923	189841	910221	389901	702	61	2298	20
50	45939	48	518082	8326	520320	8387	762	61	2238	10
43 °	50787	47	139756	6825	131933	6885	823	60	2177	017
10	55634	48	752931	5339	745048	5400	883	61	2117	50
20	60482	47	367592	3863	359648	3925	944	61	2056	40
30	65330	47	983729	2394	975723	2455	1006	61	1994	30
40	70178	47	601335	0931	593168	0993	067	62	1933	20
50	75025	48	220404	379490	212275	379552	129	62	1871	10
44 °	79873	47	840914	8051	832723	8113	191	63	1809	016
10	84721	48	462863	6626	454610	6688	253	63	1747	50
20	89569	47	086237	5111	077922	5274	315	63	1685	40
30	94416	48	711026	3810	702648	3873	378	64	1622	30
40	99264	47	337216	2420	328775	2483	441	64	1559	20
50	1304112	48	964796	1039	956292	1102	504	64	1496	10
45 °	08960	47	593757	369668	585190	369732	567	65	1433	015
10	13807	48	224089	8304	215458	8368	631	65	1369	50
20	18655	47	855785	6952	847090	7016	695	65	1305	40
30	23503	48	488833	5612	480074	5676	759	66	1241	30
40	28357	47	123221	4280	114398	4344	823	66	1177	20
50	33198	48	758941	2955	750054	3020	887	66	1113	10
46 °	38046	47	395986	1642	387034	1707	952	67	1048	014
10	42894	48	034344	0339	025327	0404	9017	67	0983	50
20	47741	47	674005	359047	664923	359113	082	67	0918	40
30	52589	48	314958	7759	305810	7825	148	68	0852	30
40	57437	47	957199	6482	947985	6548	214	68	0786	20
50	62284	48	600717	5217	591437	5183	280	68	0720	10
47 °	67132	47	245500	3958	236154	4034	346	69	0654	013
10	71980	48	891542	2710	882130	2777	412	69	0588	50
20	76827	47	538832	1470	529353	1537	479	69	0521	40
30	81675	48	187362	0239	177816	0306	546	70	0454	30
40	86523	47	837123	349016	827510	349083	613	70	0387	20
50	91370	48	488107	7806	478427	7874	680	70	0320	10
60	96218		140301		130553		748		0252	012

Grad. 89.

S.M.

Grad. o.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar	D.	Sinus.	
48 0	1396218	48	7140301	346599	7130553	346667	9748	68	00252	60
10	1401066	47	+793702	5399	+783886	5467	816	69	00185	50
20	05913	46	0448303	4210	0438419	4278	884		0117	40
30	10761	45	104093	3029	094141	3097	952		0048	30
40	15609	44	+761064	1859	+751044	1928	10020	69	99980	20
50	20456	43	419205	0695	409116	0764	089	70	99911	10
49 0	25304	42	078310	339534	068352	339603	158		9841	011
10	30152	41	+738976	8388	+728749	8458	227	70	9773	50
20	34999	40	+400588	7248	+390291	7318	297		9703	40
30	39847	39	063340	6113	052973	6183	367		9634	30
40	44695	38	+727227	4985	+716790	5055	437		9564	20
50	49542	37	392242	3865	381735	3935	507		9494	10
50 0	54390	36	058377	2754	047800	2825	577	71	9423	010
10	59237	35	+725623	1648	+714975	1719	648		9353	50
20	64085	34	393975	0551	383256	0622	719		9282	40
30	68933	33	063424	329463	052634	329534	790		9211	30
40	73780	32	+733961	8384	+723100	8456	861	71	9139	20
50	78628	31	405577	7311	394644	7383	933		9068	10
51 0	83475	30	078266	6244	067261	6316	11005		8996	0 9
10	88323	29	+752022	5183	+740945	5255	077		8924	50
20	93171	28	0426839	4128	0415690	4201	149	73	8852	40
30	98019	27	103781	3080	091489	3153	222		8775	30
40	1502866	26	+779631	2037	+768336	2110	294		8706	20
50	07713	25	0457594	0999	0446226	1072	368		8633	10
52 0	12561	24	136595	319973	125154	0047	441	74	8560	0 8
10	17409	23	+816622	8957	+805107	319031	515		8487	50
20	22256	22	0497665	7944	0486076	3018	589		8413	40
30	27104	21	179721	6933	168055	7007	663		8339	30
40	31951	20	+862788	5930	+851091	6004	737		8265	20
50	36799	19	546858	4934	535047	5008	811		8191	10
53 0	41646	18	831924	3947	220039	4022	885	75	8116	0 7
10	46494	17	+917977	2967	+906017	3042	960		8041	50
20	51341	16	0605010	1989	0592975	2065	035	76	7966	40
30	56189	15	293021	1014	280910	1090	11111		7891	30
40	61037	14	+982007	30052	+969820	0128	187		7815	20
50	65884	13	5671955	9096	559693	309172	263		7739	10
60	70732	12	362859		350520	339	339		7663	0 6

Grad. 89.

15 M

B 2

Grad. 70.

M S	Sinus.	D	Logarith.	Differ.	Different.	Differ.	Logar	D.	Sinus.	
54	0	1570732	41	362859	308142	41	350520	12339	7663	60
10		75579	41	054717	7190	41	042302	415	7587	50
20		80426	48	747527	6253	41	735036	491	7510	40
30		85274	47	441274	5319	41	428706	5396	7434	30
40		90122	47	135955	4389	41	123310	4466	7357	20
50		94969	48	831566	3464	41	818844	3541	7280	10
55	0	99817	47	528102	2545	41	515303	2612	7202	0
10		1604664	48	225557	1635	41	212681	2713	7124	50
20		09512	47	923922	0728	41	910968	0806	7046	40
30		14359	48	623154	199824	41	610162	199902	6968	30
40		19207	47	313370	8928	41	310360	9007	6890	20
50		24054	48	024442	8035	41	011353	8114	6811	10
56	0	28902	47	726407	7150	41	713139	7219	6733	0
10		33749	48	429257	6271	41	415910	6350	6653	50
20		38597	47	132986	5397	41	119560	5477	6574	40
30		43444	48	837589	4527	41	824083	4607	6495	30
40		48292	47	0543062	3659	41	0529476	3732	6415	20
50		53139	48	249403	2798	41	235737	2879	6335	10
57	0	57987	47	956605	1943	409	942858	2022	6254	0
10		62834	48	664662	1093	409	650835	1174	6174	50
20		67682	47	373569	0248	409	359661	0329	6093	40
30		72529	48	083322	89408	409	069332	89408	6012	30
40		77377	47	793913	8574	409	779843	8655	5931	20
50		82224	48	505339	7744	409	491188	7826	5850	10
58	0	87072	47	237595	6919	407	203362	7001	5768	0
10		91919	48	930676	6097	407	916361	6175	5686	50
20		96766	47	644379	5279	407	630182	5361	5604	40
30		101614	48	359300	4468	406	344821	4551	5522	30
40		06461	47	074832	3660	406	060270	3743	5439	20
50		11309	48	791172	2856	406	776527	2939	5356	10
59	0	16156	47	508316	2058	406	493588	2142	5273	0
10		21004	48	226258	1285	405	211446	1349	5190	50
20		25851	47	944993	0477	405	930097	0561	5106	40
30		30698	48	664516	179690	405	649536	179774	5022	30
40		35546	47	384826	8910	405	369762	8994	4938	20
50		40393	48	105956	8134	405	090768	8218	4854	10
60		45242	47	4827782	4812550	405	4812550	232	4769	0

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S.M.

Grad. 1.

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M. S.	Sinus.	Logarith.	Differ.	Different.	Differ.	Logar.	D	Sinus.
0 0	174514	404	177363	404	177448	15232	85	476
10	50088	447	6997	404	6682	317	86	468
20	54935	47	273822	403	258420	401	86	460
30	59783	47	997986	403	982499	521	87	451
40	64630	48	723908	403	707336	5163	86	442
50	69478	47	448585	403	432927	4409	86	434
1 0	74325	47	175015	401	159271	3656	87	425
10	79172	48	902195	401	886365	2906	87	417
20	84020	47	630120	401	614204	2161	87	408
30	88867	47	358783	401	342780	1424	87	398
40	93714	48	088175	401	072081	0695	88	389
50	98562	47	818293	401	802116	169969	88	380
1 0	103409	47	549135	401	532871	090	88	371
10	08156	48	280704	401	264352	177	88	362
20	13104	47	012995	400	996555	264	88	353
30	17951	48	746002	400	729474	352	89	344
40	22798	47	479721	400	463105	440	89	335
50	27646	47	214148	399	197444	528	89	326
3 0	32493	48	949278	399	932485	616	89	317
10	37340	47	685108	399	668226	704	90	308
20	42188	47	421633	398	404662	793	90	299
30	47035	48	158848	398	141788	882	90	290
40	51882	47	896791	398	879601	971	91	281
50	56730	47	635340	398	618100	1060	91	272
4 0	61577	48	374613	397	357283	1150	91	263
10	66425	47	114566	397	097146	1240	91	254
20	71273	47	855196	397	837685	1330	91	245
30	76121	48	596498	397	578896	1420	91	236
40	80969	47	338467	396	320774	1510	91	227
50	85817	47	081098	396	063314	1600	91	218
5 0	90665	48	824387	396	806511	1690	91	209
10	95513	47	568332	396	550364	1780	91	200
20	100361	47	312931	396	294871	1870	91	191
30	05202	48	058183	395	040031	1960	91	182
40	10050	47	804084	395	785839	2050	91	173
50	14897	47	550631	395	532193	2140	91	164
6 0	19744	47	297821	395	279390	2230	91	155

Grad. 88.

57.

B 3

Grad. I.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.
6 0	1919744	47	297821	252171	391394	279390	18431	93	1571 60
10	24591	48	045650	1537	027126	1630	524	94	1478 50
20	29439	4847	794113	0907	775496	1001	617	94	1385 40
30	34286	4847	543206	0280	524495	0374	711	94	1291 30
40	39133	48	292926	249656	274121	0374	805	95	1197 20
50	43980	48	043270	9034	024371	249750	899	96	1103 10
7 0	48828	47	794236	8416	775243	9128	993	95	1009 053
10	53675	47	545820	7802	526732	8511	19088	95	0914 50
20	58522	48	298018	7190	278835	7897	183	96	0819 40
30	63369	48	050822	6582	031550	7285	278	96	0724 30
40	68216	48	804246	5977	784873	6677	373	97	0629 20
50	73064	47	558269	5372	538801	6072	468	97	0533 10
8 0	77911	48	312897	4762	293333	5468	564	96	0437 052
10	82758	48	068135	4165	048475	4858	660	97	0341 50
20	87605	48	823970	3571	804214	4261	756	97	0245 40
30	92452	48	580399	2980	560546	3668	853	97	0149 30
40	97300	47	337419	2393	317469	3077	950	98	0052 20
50	1002147	47	095026	1809	074979	2490	10047	99	9955 10
9 0	06994	390	853217	1226	833073	1906	144	997	9858 051
10	11841	390	611991	0643	591750	1323	241	98	9760 50
20	16688	390	371348	0061	351009	0741	339	98	9663 40
30	21535	389	131287	239485	110850	0159	437	99	9565 30
40	26382	389	891801	8914	871267	39183	535	99	9467 20
50	31230	389	652885	8346	632255	9012	633	99	9369 10
10 0	36077	388	414542	7780	393810	8445	732	100	9270 050
10	40924	388	176762	7215	155931	7879	831	100	9171 50
20	45771	388	919547	6654	918617	7314	930	100	9072 40
30	50618	387	702893	6095	681864	6753	21029	100	8973 30
40	55465	387	466798	5540	445669	6195	129	100	8873 20
50	60312	387	231258	4988	210029	5640	229	100	8773 10
11 0	65159	387	996270	4429	974941	5088	329	101	8673 049
10	70007	387	761841	3883	740412	4529	429	101	8573 50
20	74854	386	527958	3338	506428	3984	530	101	8473 40
30	79701	386	294620	2796	272989	3439	631	101	8373 30
40	84548	386	061824	2257	040092	2897	731	101	8271 20
50	89395	386	849567	1718	807734	2358	833	101	8170 10
60	94242	386	597849		575915	1819	934	101	8068 048

Grad. 88.

15.21

Grad. 70

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M. S.	Sinus.	D.	Logarith.	Differ.	Different	Differ.	Logar.	D.	Sinus.
12 0	2094242	447	3597849	131180	3575915	231282	11934	101	8060 0
10	99089		3666669		344633	0748	12036		7967 50
10	2103936		136023		113885	0217	138		7861 40
30	08783		905908		383668	29688	240		7743 30
40	13630		676322		653980	9164	342		7660 20
50	18477		447261		424816	8641	445		7558 10
13 0	23324	48	218723	119586	196175	8120	548	03	7455 047
10	28171		990706		968055	7600	651		7352 50
10	33018		763209		740455	7084	754		7249 40
30	37865		536229		513371	6570	858		7145 30
40	42712		309763		286801	6058	962		7041 20
50	47560		083809		060743	5548	23066		6937 10
14 0	52407	47	858365	4936	835195	5040	170	04	6833 046
10	57254		633429		610155	4536	274		6729 50
10	62101		408998		385619	4035	379		6624 40
30	66948		185068		161584	3535	484		6519 30
40	71795		961638		938049	3036	589		6414 20
50	76642		738707		715013	2540	694		6308 10
15 0	81489	46	516273	1939	492473	2045	800	05	6203 045
10	86335		294334		370428	1554	906		6097 50
10	91182		072886		048874	1066	24012		5991 40
30	96029		851926		827808	0580	118		5884 30
40	2100876		631453		607228	0094	225		5778 20
50	05723		411466		387134	29610	332		5671 10
16 0	10570	46	191963	19987	167524	9128	439	06	5564 044
10	15417		972942		948396	8651	546		5457 50
10	20264		0754390		729745	8175	654		5349 40
30	25111		536332		511570	7701	762		5241 30
40	29958		318739		293869	7227	870		5133 20
50	34805		101620		076642	6758	978		5025 10
17 0	39653	46	884971	379	859884	6289	25087	07	4917 043
10	44499		668791		643595	5821	196		4808 50
10	49346		453079		427774	5356	205		4699 40
30	54193		237832		212418	4896	414		4590 30
40	59040		023045		997522	4436	523		4480 20
50	63886		808719		783026	3978	633		4371 10
60	68733	47	554851	3868	569108		743	10	4261 042

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M. S.

Grad. 1.

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M.S.	Sinu.	D.	Logarith.	Differ.	Different	Diff. r.	Logar	D	Sinu.
18 0	1268733	4847	378 594851	213411	378 569108	213521	25743	110 9997	426 60
10	73580		381440	2956	355187	3066	853	110	415 50
20	78427		168484	2504	143521	2615	963	111	4040 40
30	83274		955980	2054	929906	3165	26074		3930 30
40	88121		743926	1603	717741	3714	185		3819 20
50	92968		532323	1155	506027	4266	296		3708 10
19 0	97815	46	321168	0711	294761	4823	407	112	3597 041
10	1302661	47	110457	0267	083938	5379	519		3485 50
20	07508		900190	209826	873559	5938	631		3373 40
30	12355		690364	9387	663621	9499	743		3261 30
40	17202		480977	8950	454122	9061	855		3149 20
50	22049		272027	8514	245060	8627	967	113	3037 10
20 0	26896	46	063513	8080	036433	8193	27080		2924 040
10	31742	47	855433	7647	828240	7760	193		2811 50
20	30589		647786	7215	620480	7329	306	114	2698 40
30	41436		440571	6787	413151	6901	420		2585 30
40	46283		233784	6361	206250	6475	534		2471 10
50	51130		027422	5936	999775	6051	648	115	2357 10
21 0	55976	46	821487	5513	793714	5627	763	114	2243 039
10	60821	47	615974	5091	588097	5206	877		2129 50
20	65670		410883	4671	382891	4786	992	115	2014 40
30	70517		206212	4252	178105	4367	28107		1899 30
40	75364	46	001960	3834	973738	3949	221		1784 10
50	80210	47	798126	3418	769789	3533	337		1669 10
22 0	85057	373	594708	3004	566256	3119	452		1553 038
10	89904		391704	2593	363137	2709	567	116	1438 50
20	94751		189111	2184	160428	2300	683		1322 40
30	99597	46	986927	1777	958128	1893	799		1206 30
40	1404444	47	785150	1371	756235	1488	915		1089 20
50	09291		583775	0967	554747	1084	29032	117	0972 10
23 0	14138	46	382312	0565	353663	0682	149		0855 037
10	18984	47	182247	0164	152981	0281	266		0738 50
20	23331		981083	199764	952700	9882	383	118	0621 40
30	28678	46	782319	9364	752818	9482	501		0503 30
40	33524	47	582955	8965	553336	9083	619		0385 20
50	38371		383990	8567	354253	8685	737		0267 10
60	43218		185423		155568		855		0149 036

Grad. 88.

S.M.

Grad. 1.

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M. S.	Sinu.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinu.
24 0	1443218	4847	1185423	198174	1155568	198292	29855	118	0149 60
10	48065	370	987249	7782	957276	7901	973	19	0030 50
20	52911	47	789467	7391	759375	7510	30092	19	9912 40
30	57758	46	592076	7007	561865	7116	211	10	9793 30
40	62605	46	395069	6620	364739	6740	330	10	9673 20
50	67451	47	198449	6233	167999	6353	450	10	9554 10
25 0	72298	46	002216	5846	971646	5966	570	11	9434 035
10	77145	369	808370	5463	775680	5583	690	11	9314 50
20	81991	47	610907	5081	580097	5202	810	11	9194 40
30	86838	46	415826	4700	384895	4821	931	11	9073 30
40	91684	47	221126	4321	190074	4442	31052	12	8953 20
50	96531	46	026805	3944	995632	4065	173	12	8832 10
26 0	1501378	368	832861	3565	801567	3691	294	12	8711 034
10	06224	47	639292	3196	607876	3318	416	12	8589 50
20	11071	46	446096	2824	414558	3318	538	12	8468 40
30	15918	46	253272	2454	221612	2576	660	13	8346 30
40	10764	47	060818	2085	029036	2207	782	13	8224 20
50	25611	367	868733	1716	836825	1839	904	13	8101 10
27 0	30457	47	677017	1347	644990	1470	32027	14	7975 033
10	35304	46	485670	0982	453520	1105	150	14	7856 50
20	40150	47	294688	0618	262415	0741	273	14	7733 40
30	44997	46	104070	0255	071674	0379	396	14	7610 30
40	49844	366	913815	189894	881295	0018	520	14	7486 20
50	54690	47	723921	9534	691277	9658	644	15	7362 10
28 0	59537	46	534387	9174	501619	9298	768	15	7238 032
10	64383	47	345213	8815	312321	8940	892	15	7114 50
20	69230	46	156398	8458	123381	8583	33017	15	6990 40
30	74076	47	967940	8104	934798	8229	142	16	6865 30
40	78923	46	779836	7751	746569	7876	267	16	6740 20
50	83769	47	592085	7399	558693	7524	392	16	6615 10
29 0	88616	46	404686	7048	371169	7174	517	16	6490 031
10	93462	47	217638	6699	183995	6825	643	16	6364 50
20	98309	46	030939	6352	997170	6478	769	17	6238 40
30	2603155	364	844587	6005	810692	6131	895	17	6112 30
40	08002	46	658582	5660	624561	5786	34021	17	5986 20
50	12848	47	472922	5316	438775	5443	147	17	5859 10
60	17695	47	287606		253332		274	17	5732 030

Grad. 88.

M.S.

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Grad. I.

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M. S.	Sinus.	D. Logarith.	Differ	Different.	Differ.	Logar.	D	Sinus	
30 0	2617695	46	287606	187973	364	34274	127	573	0
10	23541	47	101633	4631	364	401	127	5605	10
20	27388	47	918002	4290	363	528	127	5478	20
30	32234	47	733712	3950	363	655	128	5351	30
40	37081	46	549762	3612	361	783	128	5223	40
50	41927	47	366150	3276	361	911	128	5095	50
31 0	46774	46	182874	2941	362	3404	129	4967	025
10	51620	46	999933	2607	362	3069	129	4838	50
20	56466	47	817326	2274	361	167	129	4710	40
30	61313	46	635052	1942	361	296	130	4581	30
40	66159	47	453110	1610	361	425	130	4452	20
50	71006	46	271500	1280	361	554	130	4322	10
32 0	75852	47	0,0220	0952	361	684	131	4193	028
10	80698	47	909268	0625	361	814	131	4063	50
20	85545	46	728643	0299	361	944	131	3933	40
30	90391	47	548344	179975	360	36074	132	3802	30
40	95238	46	368369	9652	360	204	132	3672	20
50	1700084	47	188717	9329	360	335	132	3541	10
33 0	04930	47	009388	9007	360	466	133	3410	027
10	09777	46	8330381	8686	360	597	133	3279	50
20	14623	47	651695	8367	360	728	133	3147	40
30	19469	47	473328	8049	360	859	134	3016	30
40	24316	46	295279	7733	360	991	134	2884	20
50	29162	47	117546	7418	360	37123	134	2751	10
34 0	34008	47	940128	7102	360	255	135	2619	026
10	38855	46	763025	6780	360	388	135	2486	50
20	43701	47	586236	6477	360	521	135	2353	40
30	48547	47	409759	6166	360	684	136	2220	30
40	53394	46	233593	5856	360	787	136	2087	20
50	58240	47	057737	5547	360	920	136	1953	10
35 0	63086	47	882190	5239	360	38054	137	1819	025
10	67933	46	606951	4932	360	5373	137	1685	50
20	72779	47	532019	4627	360	5066	137	1551	40
30	77625	47	357392	4323	360	4762	138	1417	30
40	82471	47	183069	4020	360	4458	138	1282	20
50	87318	46	009049	3718	360	4155	138	1147	10
60	92164	357835331			357	861	139	1012	024
						996			

Grad. 88.

Grad. I.

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M.S.	Sinus.	D	Logarith	Differ	Different.	Differ.	Logar.	D	Sinus.
36 0	2792164	4856	835331	173416	357	796335	38996	136	1012 60
10	97010		661915	3115	357	622783	39132		0876 50
20	2801856	46	483800	2815		449532	268		0740 40
30	06703		315985	2516		276581	2951		0604 30
40	11549		143469	2220		103929	2652		0468 20
50	16395	356	971249	1922	356	931573	2060	37	0332 10
37 0	21241		799326	1627	356	759513	1764		0195 023
10	26087	47	627699	1333		587749	1470		0058 50
20	30934	46	456366	1041		416179	1178		9921 40
30	35780		285325	0749		245101	0887		9784 30
40	40626		114576	0458		074214	0596		9646 20
50	45472	355	944118	0168	355	903618	0306	38	9528 10
38 0	50318		773950	169875	355	733312	0017		9370 022
10	55165	47	604071	9581		563295	169720		9232 50
20	60011	46	434490	9304		393575	9443	39	9093 40
30	64857		265186	9018		224132	9157		8955 30
40	69703		096168	8732		054975	8871		8816 20
50	74549	354	927436	8447	354	886104	8587	40	8676 10
39 0	79395		758989	8163		717517	8303		8537 021
10	84241	47	590826	7880		549214	8020		8397 50
20	89087	46	422946	7598		381194	7738		8257 40
30	93934		255348	7317		215456	7457		8117 30
40	98780		088031	7037		045999	7178		7977 20
50	1903626	353	920994	6758	353	878821	6899	41	7836 10
40 0	08472		754236	6480		711922	6621		7695 020
10	13318		587756	6203		545301	6344		7554 50
20	18164		421553	5926		378957	6068		7413 40
30	23010		255627	5651		212889	5793		7271 30
40	27856		089976	5377		047096	5519		7129 20
50	32702	352	924599	5105	352	881577	5248	42	6987 10
41 0	37548		759494	4835		716329	4977		6845 019
10	42394		594659	4566		551352	4709		6702 50
20	47240		430093	4295		386643	4438		6559 40
30	52086		265798	4022		222205	4165		6416 30
40	56932		101776	3751		058040	3895		6273 20
50	61778	351	928025	3482	351	894145	3626	43	6130 10
60	66624		774543			730519			5986 018

Grad. 88.

S.M.

Grad. i.

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M.S.	Sinus.	D.	Logarith	Differ.	Different.	Differ.	Logar.	D.	Sinus.
42 °	2966624	4846	774543	163215	730519	163359	44024	144	5986 60
10	71470		611328	2950	567160	3094	168	145	5984 50
20	76316		448378	2686	404066	2831	312	45	5698 40
30	81162		285692	2422	241235	2566	457	44	5553 30
40	86008		123270	2159	078669	2304	601	45	5409 20
50	90854	350	961111	1896	916365	2041	746	46	5264 10
43 °	95700		799215	1634	754324	1779	891	47	5119 017
10	3000546		637581	1373	592545	1519	45036	46	4973 50
20	05392		476208	1112	431026	1258	182	47	4828 40
30	10238		315096	0852	269768	0998	328	48	4682 30
40	15084	349	154244	0592	108770	0738	474	47	4536 20
50	19930		993652	0334	948032	0481	620	48	4390 10
44 °	24776		833318	0077	787551	0224	767	49	4243 016
10	29622		673241	59822	627327	59969	914	48	4096 50
20	34468		513419	9568	467358	9716	46061	47	3949 40
30	39314	45	353851	9315	307642	9462	209	46	3802 30
40	44160		194536	9062	148180	9310	356	45	3655 20
50	49005		035474	8808	988970	8956	504	44	3507 10
45 °	53851		876666	8555	830014	8703	652	43	3359 015
10	58697		718111	8304	671311	8452	800	42	3211 50
20	63543	46	559807	8053	512859	8202	948	41	3063 40
30	68389		401754	7803	354657	7952	47097	40	2914 30
40	73235		243951	7554	196705	7703	246	39	2765 20
50	78081		086397	7306	039002	7455	395	38	2616 10
46 °	82926		929091	7059	881547	7209	544	37	2466 014
10	87772	47	772032	6813	724338	6963	694	36	2317 50
20	92618		615219	6568	567375	6718	844	35	2167 40
30	97464		458651	6324	410657	6474	994	34	2017 30
40	3102310		302327	6079	254183	6230	48144	33	1867 20
50	07156		146248	5834	097953	5985	295	32	1716 10
47 °	12001	48	990414	5590	941968	5741	446	31	1566 013
10	16847		834824	5348	786227	5499	597	30	1415 50
20	21693		679476	5108	630728	5260	748	29	1263 40
30	26539		524368	4868	475468	5019	900	28	1112 30
40	31384		369500	4629	320449	4781	49051	27	0960 20
50	36230	49	214871	4391	165668	4543	203	26	0808 10
60	41076		060480		011125		355	25	0656 012

Grad. 88.

J.M.

Grad. I.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	
48 0	3141076	46	6060480	154153	6011125	154305	49355	52	9085	0656 60
10	45922	45	906327	3917	856820	4070	507	51	9085	0504 50
20	50767	45	752410	3671	702750	3825	660	15	9085	0351 40
30	55613	45	598738	3438	548925	3591	813	54	9085	0198 30
40	60459	45	445300	3204	395334	3358	966	54	9085	0045 20
50	65305	45	292096	1971	241976	3125	50120	54	9085	9892 10
49 0	70150	46	139125	1738	088851	2892	274	54	9085	9738 011
10	74996	45	986387	2505	935959	2659	428	55	9085	9584 50
20	79841	46	833382	2272	783300	2427	582	55	9085	9430 40
30	84687	45	681610	2040	630873	2194	737	54	9085	9276 30
40	89533	45	529570	1809	478679	1964	891	55	9085	9121 20
50	94379	45	377761	1578	326715	1733	91046	55	9085	8967 10
50 0	99224	46	226183	1348	174982	1503	201	56	9085	8812 010
10	3204070	45	074835	1110	023479	1276	356	56	9085	8657 50
20	08916	45	923715	0892	872203	1048	512	56	9085	8501 40
30	13761	46	772823	0665	721155	0821	668	57	9085	8345 30
40	18607	45	622158	0438	570334	0594	824	57	9085	8189 20
50	23452	46	471720	0212	419740	0369	980	57	9085	8033 10
51 0	28298	45	321508	149986	269371	0143	52137	58	9085	7877 0 9
10	33144	45	171522	9760	119228	0143	294	58	9085	7720 50
20	37989	46	021762	9535	969311	149917	451	58	9085	7563 40
30	42835	45	872217	9312	819619	9692	608	58	9085	7406 30
40	47680	46	722915	9090	670150	9469	765	58	9085	7249 20
50	52526	45	573825	8868	520902	9248	923	58	9085	7091 10
52 0	57372	45	424957	8646	371876	9026	53081	59	9085	6934 0 8
10	62217	46	276311	8426	223072	8804	239	59	9085	6776 50
20	67063	45	127885	8206	074488	8584	397	59	9085	6617 40
30	71908	46	979679	7986	926123	8365	556	59	9085	6459 30
40	76754	45	831693	7767	777978	8145	715	59	9085	6300 20
50	81599	46	683926	7549	630052	7926	874	59	9085	6141 10
53 0	86445	45	536377	7332	482344	7708	54033	60	9085	5981 0 7
10	91290	46	389045	7115	334812	7492	193	59	9085	5822 50
20	96136	45	241930	6898	187578	7274	352	60	9085	5663 40
30	3300981	46	095032	6682	040520	7058	512	60	9085	5503 30
40	05827	45	948350	6466	893678	6842	672	61	9085	5343 20
50	10672	46	801884	6251	747051	6627	833	61	9085	5182 10
60	15518	46	655633		600639	6412	994		9085	5022 0 6

Grad. 88.

S.M.

Grad. 1.

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M S.	Sinus.	D.	Logarithb.	Differ.	Different.	Differ.	Logar.	D.	Sinus.
54 °	3315518	45	685633	146037	600639	146198	54994	161	502260
10	20363	45	509596	5825	454441	5586	55155	61	486150
20	25209	45	363771	5612	308455	5774	316	61	470040
30	30054	46	218159	5401	162681	5562	478	61	453830
40	84900	45	072758	5190	017119	5352	63	62	437720
50	39745	46	927568	4980	871767	5142	801	61	421510
55 °	44591	45	782588	4770	726625	4932	963	61	405300
10	49426	45	637818	4560	581693	4723	56125	61	389150
20	54281	46	483258	4350	436970	4513	288	61	372840
30	59127	45	348908	4141	292457	4304	451	61	356530
40	63972	46	204767	3934	148153	4097	612	61	340220
50	68818	45	060833	3726	004056	3890	777	64	323910
56 °	73663	45	917107	3518	860166	3681	941	63	307600
10	78508	46	773584	3312	716485	3476	57104	64	291250
20	83354	45	630277	3107	575009	3271	268	64	274840
30	88195	46	487170	2903	429738	3068	432	65	258430
40	93044	45	344267	2701	286670	2866	597	65	242020
50	97890	46	201566	2499	143804	2664	762	65	225510
57 °	3402735	45	059067	2296	001140	2461	927	66	209000
10	07580	46	916771	2093	858679	2259	58092	66	192550
20	12426	45	774678	1890	716420	2055	258	65	176040
30	17271	46	632788	1688	574365	1854	423	66	159430
40	22116	45	491100	1486	432511	1652	589	66	142820
50	26961	46	349614	1286	290859	1452	755	66	126210
58 °	31807	45	208328	1087	149407	1253	921	67	109600
10	36652	46	067241	0889	008154	1056	59087	67	093050
20	41497	45	926352	0691	867098	0858	254	67	076340
30	46343	46	785661	0493	726240	0660	421	68	059630
40	51188	45	645168	0295	585580	0463	588	68	042920
50	56033	46	504873	0098	445117	0266	756	68	026110
59 °	60878	45	364775	139901	304851	0069	924	69	009400
10	65724	46	224874	9705	164782	139874	60092	69	992650
20	70569	45	085169	9510	024908	9678	261	69	975540
30	75414	46	945659	9316	885230	9485	429	69	958930
40	80259	45	806343	9122	745745	9291	598	69	942120
50	85104	46	667221	8928	606454	9097	767	69	925210
60	89950	45	528293		467557		936	69	908000

Grad. 28.

S M

Grad. 2.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ	Logar.	D.	Sinus.
0 0	3489950	4845	315 528293	38734	467357	38903	60936	69 9993	9083 60
10	94795		315 389554	8542	328454	8712	61105	70 9993	8913 50
20	99640		251017	8351	189742	8521	275	71 170	8744 40
30	3504485		112666	8161	051221	8331	445	72 170	8574 30
40	09330		974505	7972	912896	8142	615	73 170	8404 20
50	14175		836533	7782	774748	6953	785	74 170	8234 10
1 0	19021	46	698751	7592	636795	7762	956	75 170	8063 059
10	23866	45	561159	7402	499033	7573	62126	76 170	7893 50
20	28711		423757	7212	361460	7383	297	77 170	7722 40
30	33556		286545	7022	224077	7194	468	78 170	7550 30
40	38401		149523	6833	086883	7005	640	79 170	7379 20
50	43246		012690	6645	949878	6818	812	80 170	7207 10
2 0	48091	333	876045	6457	813060	6629	985	81 170	7035 058
10	52936	333	739588	6273	676431	6446	63157	82 170	6863 50
20	57781		603315	6088	539985	6260	330	83 170	6691 40
30	62626	46	467227	5904	403725	6077	502	84 170	6518 30
40	67472	45	331323	5721	267648	5894	675	85 170	6345 20
50	72317		195602	5537	131754	5711	848	86 170	6172 10
3 0	77162	332	060065	5353	996043	5526	64022	87 170	5999 057
10	82007	332	924712	5176	860517	5344	195	88 170	5826 50
20	86852		789542	4988	725175	5162	369	89 170	5652 40
30	91697		654554	4806	590011	4981	543	90 170	5478 30
40	96542		519748	4624	455030	4798	718	91 170	5304 20
50	3601387		385124	4443	320232	4618	892	92 170	5129 10
4 0	06232	331	250681	4262	185614	4437	65067	93 170	4954 056
10	11077	331	116411	4081	051177	4257	242	94 170	4779 50
20	15922		982235	3900	916920	4075	418	95 170	4604 40
30	20767		848435	3721	782845	3897	593	96 170	4429 30
40	25612	44	714717	3542	648948	3718	769	97 170	4253 20
50	30456	45	581175	3363	515230	3539	945	98 170	4077 10
5 0	35301		447812	3185	381691	3362	66121	99 170	3901 055
10	40146		314627	3008	248325	3184	298	100 170	3725 50
20	44991		181619	2831	115145	3008	474	101 170	3548 40
30	49836		048788	2654	982137	2831	651	102 170	3371 30
40	54681	340	916134	2478	849306	2655	828	103 170	3194 20
50	59526		783656	2303	716651	2481	67005	104 170	3017 10
60	64371		651353		584170		183	105 170	2839 054

Grad. 87.

S.M.

Grad. 2.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.
6 0	3664371		657353		584170	132306	67183		2839 60
10	69216	+1	514225	132128	451864		361	178	1662 50
20	74061		387271	1954	119732	2132	539	79	2484 40
30	78905	+4	255490	1781	187772	1960	718	78	2305 30
40	83750	+5	123883	1607	055987	1785	896	78	2127 20
50	88595	+5	992449	1434	924374	1613	68075	79	1948 10
7 0	93440		861187	1262	792933	1441	254		1769 053
10	98285		730097	1090	661664	1269	433		1590 50
20	3703130	+2	599180	0917	530567	1097	613	80	1411 40
30	07974	+3	468436	0744	399644	0923	792	79	1231 30
40	12819		337864	0572	268892	0752	972	80	1051 20
50	17664		207463	0401	138311	0581	69152	81	0871 10
8 0	22509		077232	0231	007899	0412	333	80	0691 052
10	27354	+4	947170	0062	877657	0242	513	81	0510 50
20	32192	+5	817277	129893	747583	0074	694	81	0329 40
30	37045		687552	9725	617677	129906	875	82	0148 30
40	41888		557995	9557	487938	9739	70057	82	9967 20
50	46733	+4	428605	9396	358366	9572	139	83	9785 10
9 0	51577	+5	299381	9224	228960	9406	421	83	9603 051
10	56422		170328	9053	099724	9236	604	82	9421 50
20	61267	+4	041441	8886	970656	9068	786	82	9239 40
30	66111	+5	912721	8721	841752	8904	969	83	9057 30
40	70956		784165	8556	713013	8739	71152		8824 20
50	75801		655772	8392	584438	8575	335		8691 10
10 0	80640		527545	8228	456027	8411	518		8508 050
10	85490	+4	399482	8063	327781	8246	701	84	8325 50
20	90335	+5	271583	7899	199698	8083	885	84	8141 40
30	95179	+4	143848	7735	071779	7919	72069	85	7957 30
40	3800024		016276	7572	944022	7757	254	85	7773 20
50	04869	+4	888867	7409	816429	7593	438	84	7589 10
11 0	09713	+5	761620	7247	688997	7432	623	85	7404 045
10	14558		634535	7085	561727	7270	808		7219 50
20	19403	+4	507612	6923	434619	7108	993	86	7034 40
30	24247	+5	380851	6761	307672	6947	73179	85	6849 30
40	29092	+4	254251	6600	180887	6785	364	86	6663 20
50	33936	+5	127812	6439	054262	6625	550		6478 10
60	38781		001534	6278	5927793	6464	736		6292 041

Grad. 87.

S.M.

Grad. 2.

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M. S.	Sinus.	D.	Logarith. Differ.	Different.	Differ.	Logar. D.	Sinus.
12 0	3838781		6001534	6118	927798	73736	6292 60
10	43625	44	875416	969	801494	3922 86	6105 50
20	48470	52	749456	802	675347	4109 87	5919 40
30	53315	44	623654	645	549355	4295 86	5732 30
40	58159	45	493009	488	423527	4482 187	5545 10
50	63004	44	373521	332	297352	4669 88	5358 10
13 0	67848	45	247189	176	172332	4857 87	5171 047
10	72693	44	122013	020	046969	5044 88	4983 50
20	77537	45	996993	855	921761	5232	4795 40
30	82382	44	872138	701	796718	5420 89	4607 30
40	87226	45	747437	547	671828	5609	4415 10
50	91071	44	622890	393	547092	5798	4232 10
14 0	96915		498497	239	422510	5987	4041 046
10	3901759	45	374258	085	298082	6176 90	3855 50
20	06604	44	250173	930	173807	6366 89	3663 40
30	11448	45	126243	776	049688	6555 90	3474 30
40	16193	44	002467	621	925722	6745 113	3284 10
50	21137	45	878845	469	801910	6935 91	3094 10
15 0	25982	44	755376	316	678250	7126 90	2904 045
10	30826	45	632060	163	554744	7316 91	2713 50
20	35670	44	508897	011	431390	7507 92	2522 40
30	40515	45	382886	859	308188	7698 91	2331 30
40	45359	44	263037	716	185137	7890 92	2140 10
50	50203	45	140311	563	062230	8081 93	1949 10
16 0	55048	44	017748	411	939475	8273	1757 044
10	59892	45	895337	260	816872	8465	1565 50
20	64736	44	773077	109	694420	8657	1373 40
30	69581	45	650968	960	572119	8849 93	1181 30
40	74425	44	529008	811	449966	9042	0988 10
50	79269	45	407197	663	327902	9235 94	0796 10
17 0	84114	44	285534	515	206105	9429 93	0603 043
10	88958	45	164019	368	084397	9622 94	0409 50
20	93802	44	042652	221	962835	9816	0216 40
30	98647	45	921430	075	841400	80010	0022 30
40	4003491	44	800355	929	720151	0204	9818 10
50	08335	45	679426	783	599028	0398	9636 10
60	13179		558643		478050	0593	9440 042

Grad. 87.

S. M.

D

Grad. 2.

4 | —

M.S.	Sinus.	D. Logarith.	Differ.	Different.	Differ.	Logar.	D. Sinus.
18 0	4013179	31 558643	-657	311 478050	110 8331	80593	99 9440 60
10	18023 44	438006	491	357218	110 686	0788	99 9245 50
20	22868 49	317515	346	236532	110 542	0983	96 9050 40
30	27712 43	197169	200	115990	110 395	1179	95 8855 30
40	32556 4	076969	54	995595	110 250	1374	96 8659 20
50	37400	956915	909	875345	110 105	1570	8464 10
19 0	42244 45	837006	765	755240	110 961	1766	8268 0 41
10	47089 44	717241	622	635279	110 819	1962	8072 50
20	51933	597619	479	515460	110 673	2158	7875 40
30	56777	478140	337	395785	110 534	2353	7679 30
40	61621	358863	195	276251	110 392	2552	7482 20
50	66465	239608	53	156859	110 251	2749	7285 10
20 0	71309	120955	911	037608	110 108	2947	7088 0 40
10	76153	005644	769	918500	110 967	3144	6890 50
20	80998 45	821875	628	799533	110 826	3342	6693 40
30	85842 44	704247	488	680707	110 687	3540	6495 30
40	90686	645759	348	561020	110 546	3739	6296 20
50	95530	527411	207	441474	110 406	3937	6098 10
21 0	100374	409104	667	325068	110 266	4136	5899 0 39
10	05118	291337	918	206802	110 127	4335	5700 50
20	10062	173409	789	088675	110 988	4534	5501 40
30	14906	055420	651	970687	110 851	4733	5303 30
40	19750	937769	512	851236	110 712	4933	5102 20
50	24594	820257	374	735714	110 575	5133	4902 10
22 0	29438	702883	234	617549	110 434	5334	4704 0 38
10	34282	585649	997	500115	110 296	5534	4503 50
20	39126	468552	962	382817	110 163	5735	4301 40
30	43970	351590	824	265654	110 25	5936	4102 30
40	48814	234766	685	148619	110 117	6137	3902 20
50	53658	118081	550	31742	110 972	6339	3698 10
23 0	58502	005531	415	914990	110 837	6541	3497 0 37
10	63346	885116	280	798373	110 697	6743	3295 50
20	68190	768836	145	681890	110 557	6946	3093 40
30	73034	652691	100	565543	110 417	7148	2891 30
40	77878	536681	875	449330	110 278	7351	2689 20
50	82721	420806	740	333252	110 138	7554	2486 10
60	87565	305066		217309	110 0	7757	2283 0 3

Grad. 87.

18. M.

Grad. 2.

+1 —

M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.
24 0	4187565		305066		117309		87757		1183 60
10	92409		189460	606	101500	809	7960		1208 50
20	97253		073988	472	985825	675	8163		1877 40
30	4102097		958649	339	870283	542	8366 04		1673 30
40	06941		843643	206	754873	410	8570		1469 20
50	11785		728369	074	639595	278	8774 05		1265 10
15 0	16629		613428	941	524449	146	8979		1061 035
10	21472	43	498620	808	409436	013	9184		0856 50
20	26116	44	383944	676	294555	881	9389		0651 40
30	31160		269399	545	179805	750	9594 06		0446 30
40	36004		154985	414	065185	620	9800 05		0241 20
50	40848		040702	283	950697	488	9905 06		0036 10
26 0	45691	43	926550	152	836339	352	0111		9810 034
10	50535	44	812529	021	722112	219	0211		9624 50
20	55379		698638	891	608014	098	0417 07		9418 40
30	60223		584877	761	494047	967	0624 06		9211 30
40	65066	43	471245	632	380208	839	0830 07		9005 20
50	69910	44	357742	503	266498	710	1037		8798 10
27 0	74754		244368	374	152912	581	1244		8591 033
10	79597	43	131123	233	039464	453	1451 08		8383 50
20	84441	44	018006	102	926140	325	1659 07		8176 40
30	89285		905017	989	812943	197	1866 08		7968 30
40	94128	43	792156	861	699874	069	2074		7760 20
50	98972	44	679422	734	586931	943	2282 09		7551 10
28 0	4303816		566816	606	474116	815	2491		7343 032
10	08659	43	454332	479	361428	688	2700		7134 50
20	13503	44	341985	352	248867	561	2909		6925 40
30	18347		229759	226	136431	436	3118 10		6716 30
40	23190	43	117459	100	024112	309	3328 09		6506 20
50	28034	44	005684	975	911937	185	3537 10		6297 10
29 0	32877		893834	850	799877	060	3747		6087 031
10	37721	43	782109	725	687941	936	3957 11		5877 50
20	42565	44	670509	600	576131	810	4168 10		5666 40
30	47408		559034	475	464445	686	4378 11		5456 30
40	52252	43	447683	351	352883	562	4589		5245 20
50	57095	44	336457	226	241445	438	4800 12		5034 10
60	61939		225355	102	130131	314	5012		4822 030

Grad. 87.

S.M.

Grad. 2.

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M. S.	Sinus.	D.	Logarith	Differ.	Different.	Differ.	Logar.	D.	Sinus
30 0	4361939	43	311 215355	978	311 130131	111 189	95224	111 4822	60
10	66782	44	114377	855	018942	067	5435	990 4611	50
20	71626	43	003522	732	007875	944	5647	12 4399	40
30	76469	44	892790	610	796931	823	5859	13 4187	30
40	81313	43	782180	488	686108	701	6672	13 3974	20
50	86156	44	671692	366	575407	579	6285	13 3762	10
31 0	91000	43	561326	244	464828	457	6498	13 3549	029
10	95843	44	451082	122	354371	335	6711	13 3336	50
20	4400687	43	340960	001	244036	214	6924	13 3123	40
30	05530	44	230959	879	133822	093	7137	14 2909	30
40	10374	43	121080	758	023729	972	7351	14 2696	20
50	15217	44	011322	637	913757	852	7565	14 2483	10
32 0	20060	44	901685	517	803905	732	7780	15 2268	028
10	24904	43	792168	398	694173	613	7995	15 2053	50
20	29747	44	682770	279	584560	494	8210	15 1839	40
30	34590	44	573491	159	475066	375	8425	16 1624	30
40	39434	43	464332	040	365691	255	8641	16 1409	20
50	44277	44	355292	921	256436	137	8856	16 1193	10
33 0	49120	44	246371	793	147299	009	9072	16 0978	027
10	53964	43	137578	685	038290	901	9288	16 0762	50
20	58807	44	028893	566	929389	783	9504	16 0546	40
30	63650	44	920327	447	810606	663	9721	16 0329	30
40	68494	43	811880	329	711943	546	9937	16 0113	20
50	73337	44	703551	211	603397	428	100154	16 9896	10
34 0	78180	44	595340	094	494969	313	0371	16 9675	026
10	83024	43	487246	977	386658	195	0586	16 9462	50
20	87867	44	379269	860	278463	078	0801	16 9249	40
30	92710	44	271409	743	170385	961	1024	16 9027	30
40	97553	43	163666	627	062424	845	1242	16 8809	20
50	4502397	44	056039	511	954579	730	1460	16 8591	10
35 0	07140	44	948528	396	846849	615	1679	16 8372	025
10	12033	43	841132	281	739234	500	1898	16 8154	50
20	16926	44	733851	166	631734	386	2117	16 7935	40
30	21769	44	626685	051	524348	270	2337	16 7716	30
40	26613	43	519634	937	417078	157	2556	16 7496	20
50	31456	44	412697	822	309921	045	2776	16 7277	10
60	36299	44	309875		202875		2996	16 7057	024

Grad. 87.

S. M.

Grad. 2.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logat.	D.	Sinus.	
36 0	4536199	4343	305875	707	309.308	106	102996	20	9089	60
10	41142		199168	593	095953	106	3216	21	6837	50
10	45985		092575	480	989138	700	3437	20	6617	40
30	50828	308	986095	366	882438	587	3657	21	6396	30
40	55671		879729	253	775851	474	3878	21	6175	20
50	60514		773476	140	669377	361	4099	20	5954	10
37 0	65358	44	667336	028	563016	250	4320	22	5733	023
10	70201		561308	915	456766	137	4544	22	5512	50
20	75044		455393	802	350629	025	4764	23	5290	40
30	79887	307	349591	690	244604	912	4987	22	5068	30
40	84730		243901	578	138692	801	5209	23	4846	20
50	89573		138323	466	032891	689	5432	23	4624	10
38 0	94416	307	032857	355	927202	578	5655	24	4401	022
10	99259		927502	244	821624	468	5878	24	4178	50
20	404102		822258	133	716156	356	6102	23	3955	40
30	08945	42	717125	022	610800	246	6325	24	3732	30
40	13788		613103	912	505554	136	6549	24	3508	20
50	18631		507191	802	400418	026	6773	25	3284	10
39 0	23474	306	402389	692	295392	917	6997	25	3060	021
10	28317		297697	583	190475	807	7222	24	2836	50
20	33160		193114	474	085668	699	7446	25	2612	40
30	38003	43	088640	365	980969	590	7671	26	2387	30
40	42845		984275	255	876379	481	7896	26	2163	20
50	47688		880020	146	771898	372	8122	27	1937	10
40 0	52531	103	775874	038	667526	264	8348	27	1711	020
10	57374		671836	929	563262	155	8574	26	1485	50
20	62217		567907	820	459107	047	8800	27	1260	40
30	67060	42	464087	712	355060	938	9027	26	1033	30
40	71903		360375	604	251122	831	9253	27	0807	20
50	76746		256771	497	147291	724	9480	27	0580	10
41 0	81588	305	153274	390	043567	618	9707	28	0354	019
10	86431		049884	284	939949	511	9935	27	0126	50
20	91274		946600	177	836438	405	110162	28	9899	40
30	96117	43	843423	070	733033	298	0390	28	9672	30
40	4700560		740353	964	629735	192	0618	29	9444	20
50	05852		637389	857	526543	086	0846	29	9216	10
60	10645		534532		423457		1075		8988	018

Grad. 87.

S.M.

D 3

Grad. 2.

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M.S.	Sinus.	D.	Logarith	Differ.	Different.	Differ.	Logar.	D	Sinus.
42 °	4710645	105	5345331	105	433457	105	111075	105	8988 60
10	15488	105	431781	646	310478	105	1303	19	8759 50
20	20331	41	329435	541	217601	105	1531	19	8530 40
30	25173	43	226594	436	114833	105	1761	30	8301 30
40	30016	43	124158	331	012168	105	1990	30	8071 20
50	34859	41	021817	226	909607	105	2220	30	7843 10
43 °	39701	304	919601	121	807351	304	2450	31	7613 01
10	44544	43	817480	016	704799	105	2681	30	7383 50
20	49387	41	715464	911	602553	105	2911	31	7153 40
30	54229	43	613553	807	500411	105	3141	30	6923 30
40	59072	41	511746	703	398373	105	3373	30	6692 20
50	63915	41	410043	600	296439	105	3604	30	6461 10
44 °	68757	43	308443	497	194608	105	3835	31	6230 01
10	73600	41	206946	393	091380	105	4066	32	5999 50
20	78443	41	105553	290	991255	105	4298	32	5767 40
30	83285	43	004163	187	889733	105	4530	33	5535 30
40	88128	41	903076	085	788334	105	4761	33	5303 20
50	92970	43	801991	983	686996	105	4995	34	5071 10
45 °	97813	42	701008	881	585780	105	5228	34	4839 01
10	4801655	43	600129	780	484666	105	5461	34	4606 50
20	07498	41	509347	679	383653	105	5694	34	4373 40
30	12340	43	398668	577	282740	105	5928	33	4140 30
40	17183	42	298091	476	181930	105	6161	34	3906 20
50	22025	41	197615	375	081120	105	6395	34	3673 10
46 °	26868	42	097240	274	980611	105	6629	35	3439 01
10	31710	43	996966	173	880102	105	6864	34	3205 50
20	36553	41	896793	073	779695	105	7098	35	2971 40
30	41395	43	796720	9971	679387	105	7333	36	2736 30
40	46238	42	696748	871	579180	105	7568	37	2501 20
50	51080	43	596876	772	479073	105	7803	36	2266 10
47 °	55923	41	497104	671	379065	99908	8039	37	2030 01
10	60765	43	397432	573	279157	105	8275	37	1795 50
20	65607	41	297859	474	179348	105	8511	37	1559 40
30	70450	43	198385	374	079637	105	8748	36	1324 30
40	75291	41	099011	275	980027	105	8984	37	1087 20
50	80135	42	999716	176	880515	105	9221	37	0850 10
60	84977	301	900360	176	781142	105	9458	37	0614 01

Grad. 87.

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Grad. 2.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus
48 0	4884977	41	900560	39077	781101	314	119458	237	6614 60
10	89819	42	801483	98979	681788	217	9695	38	0377 30
20	94661	43	702504	181	582571	119	9933	38	0140 40
30	99504	43	603623	784	483452	021	120171	38	9902 30
40	4904346	43	504839	687	384430	98925	0409	9988	9665 20
50	09189	43	406152	590	285505	828	0647	9987	9417 10
49 0	14031	43	307562	493	186677	731	0885	39	9189 011
10	18875	43	209069	395	087945	634	1124	39	8950 50
20	23715	43	110674	297	989311	536	1363	40	8712 40
30	28558	42	012377	200	890775	439	1601	40	8473 30
40	33400	42	914177	102	792336	341	1841	40	8234 20
50	38242	43	816675	005	693995	245	2080	40	7994 10
50 0	43084	43	718070	97910	595750	150	2320	41	7755 010
10	47927	42	620160	814	497600	054	2560	41	7515 50
20	52769	42	522146	719	399546	97960	2800	41	7275 40
30	57611	42	424027	623	301586	864	3041	42	7035 30
40	62453	42	327004	528	203712	769	3282	42	6794 20
50	67295	43	229476	434	105953	674	3523	42	6554 10
51 0	72137	43	132043	338	008279	580	3764	42	6313 0 9
10	76980	42	034705	243	910699	485	4006	42	6073 50
20	81822	42	937462	148	813214	390	4248	42	5830 40
30	86664	42	840314	053	715824	295	4490	42	5589 30
40	91506	42	743161	96959	618629	201	4732	42	5347 20
50	96348	42	646302	866	521328	108	4974	42	5105 10
52 0	5001190	42	549436	772	424220	015	5216	43	4861 0 8
10	06032	42	451664	679	327205	96922	5459	43	4620 50
20	10874	42	355985	585	230283	828	5702	43	4377 40
30	15716	42	259400	491	133455	735	5945	44	4134 30
40	20558	42	162909	398	036720	642	6189	44	3890 20
50	25400	42	066571	305	940078	549	6433	44	3647 10
53 0	30241	42	970206	212	843539	457	6677	45	3403 0 7
10	35084	42	873994	120	747072	365	6922	45	3160 50
20	39926	42	777874	027	650707	272	7167	45	2915 40
30	44768	42	681847	95934	554455	179	7412	45	2671 30
40	49610	42	585913	842	458256	087	7657	45	2426 20
50	54452	42	490071	750	362169	95995	7902	45	2181 10
60	59294	42	394311		266174	8147	8147	45	1936 0 6

Grad. 87.

S.M.

M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.
54 0	5059294	442	198 394321	95658	298 266174	95904	128147	246 9987	1936 60
10	64136		198 198663	566	298 170270	812	8393		1690 50
20	68978		203097	474	074458	720	8639		1445 40
30	73820		107613	383	978738	629	8885		1199 30
40	78662		012240	292	883109	538	9131		0953 20
50	83504	41	916948	208	787571	448	9377	47	0707 10
55 0	88345	41	821247	110	692123	357	9624		0460 0
10	93187		726637	020	596766	267	9871		0213 50
20	98029		631617	94930	501499	178	130118	48 9986	9966 40
30	5102871		536687	840	406321	088	0366		9719 30
40	07713	41	441847	750	311233	94998	0614		9471 20
50	12554	42	347097	660	216235	908	0862		9223 10
56 0	17396		252437	570	121327	819	1110	49	8975 0
10	22238		157867	480	026508	728	1359	68	8727 50
20	27080		063387	390	931780	639	1607	49	8479 40
30	31922	41	968997	301	837141	550	1856		8230 30
40	36763	42	874696	211	742591	461	2105	50	7981 20
50	41605		780485	122	648130	372	2355		7732 10
57 0	46447	41	686363	033	553758	283	2605		7483 0
10	51288	42	592330	93945	459475	193	2855		7233 50
20	56130		498385	857	365280	108	3105	51	6983 40
30	60972		404528	769	271172	019	3356	50	6733 30
40	65814	41	319759	681	177153	93932	3606	51	6483 20
50	70655	42	217078	593	083221	844	3857		6232 10
58 0	75497	41	123485	505	989377	756	4108		5981 0
10	80338	42	029980	418	895621	669	4359		5730 50
20	85180		936561	330	801952	582	4610	52	5479 40
30	90022	41	843332	243	708370	495	4862		5128 30
40	94863	42	749989	156	614875	408	5114		4976 20
50	99705	41	656833	069	521467	322	5366	53	4724 10
59 0	5104546	41	563764	92982	428145	235	5619		4471 0
10	09388		470782	896	334910	149	5872		4219 50
20	14130	42	377886	810	241761	064	6125	54	3967 40
30	19071	41	285076	724	148697	92977	6379	53	3714 30
40	23913	42	192352	638	055710	892	6632	54	3460 20
50	28754	42	099714	552	962828	806	6886		3207 10
60	33596		007162	470022	870022		7140		2953 0

Grad. 3.

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M. S.	Sinus.	D	Logarith.	Differ.	Different.	Differ.	Logar. 12.	Sinus.	
0	0		2007162	200	870022	21720	137140	100	60
10	38437	41	914596	2466	777302	634	7354	100	50
20	43279	42	822316	380	684668	549	7643	100	40
30	48120	41	730022	294	592119	464	7903	100	30
40	52962	42	637813	209	499659	379	8158	100	20
50	57803	41	545639	124	407276	295	8413	100	10
1	0		453650	039	314981	209	8669	100	00
10	62644	42	361696	91954	222772	125	8924	100	59
20	67486	41	269827	869	130647	041	9180	100	50
30	72327	42	178042	785	038606	871	9436	100	40
40	77169	41	086341	701	946648	789	9693	100	30
50	82010	42	994723	616	854770	703	9949	100	20
2	0		903193	531	762987	612	10206	100	10
10	91693	41	811745	448	671282	537	0978	100	58
20	96534	42	720381	364	579660	455	0463	100	50
30	101375	41	629101	280	488123	372	0721	100	40
40	06217	42	537904	197	396668	289	0978	100	30
50	11058	41	446790	114	305296	207	1236	100	20
3	0		355755	031	214007	123	1454	100	10
10	20740	42	264812	90948	122800	041	1752	100	57
20	25582	41	173946	865	031677	2528	2011	100	50
30	30423	42	083164	782	940636	875	2269	100	40
40	35264	41	992465	699	849678	794	2787	100	30
50	40105	42	901849	616	758803	712	3046	100	20
4	0		811313	534	668009	630	3306	100	10
10	44947	41	710863	452	577297	549	3566	100	56
20	49788	42	630493	370	486667	466	3826	100	50
30	54629	41	540205	288	396118	4087	4087	100	40
40	59470	42	449999	206	305652	4347	4347	100	30
50	64311	41	359874	125	215266	305	4608	100	20
5	0		269830	044	124961	224	4869	100	10
10	78835	42	179867	89963	034737	144	5130	100	55
20	83676	41	089985	882	944593	063	5392	100	50
30	88517	42	000184	801	854530	89981	5654	100	40
40	93358	41	910464	720	764549	901	5915	100	30
50	98199	42	320825	639	674648	820	6177	100	20
60	103040	41	731267	558	584828		6439	100	10
	07881	42						100	54

Grad. 86.

S. M.

E

Grad. 3.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.
6 0	5407881	4841	731167	89478	291	584828	89740	146439	3667 60
10	12721		641789	397	291	495088	660	6701	3405 50
20	17563		552392	317		405428	580	6964	3142 40
30	22404		463075	237		315848	501	7227	2879 30
40	27245		373838	158		226347	422	7491	2616 20
50	32086		284680	078		136925	343	7755	2353 10
7 0	36927		195602	8999	290	047582	263	8020	2090 05 3
10	41768		106603	919	290	958319	184	8284	1826 50
20	46609		017684	840		869135	105	8549	1562 40
30	51450		928844	761		780030	025	8814	1298 30
40	56291		840083	681		691005	88947	9078	1033 20
50	61132		751401	603		602058	868	9343	0769 10
8 0	65973		662798	524		513190	790	9608	0504 05 2
10	70814		574274	445		424400	710	9874	0239 50
20	75655		485829	367		335690	633	150139	9973 40
30	80496	40	397462	289		247057	555	0405	+ 9708 30
40	85336	41	309173	210		158502	477	0671	9442 20
50	90177		220963	132		070025	399	0938	9176 10
9 0	95018		132831	055	289	981626	322	1105	8910 0 51
10	99859		044776	87978	289	893304	245	1472	8643 50
20	5504700	40	956798	900		805055	168	1739	8376 40
30	09540	41	868898	823		716891	090	2007	8109 30
40	14381		781075	746		628801	014	2274	7842 20
50	19222		693329	669		540787	87937	2542	7575 10
10 0	24063	40	605660	592		452850	860	2810	7307 05 0
10	28903	41	518068	515		364990	784	3078	7039 50
20	33744		430553	438		277206	706	3347	6771 40
30	38585	40	343115	361		189500	630	3615	6503 30
40	43425	41	255754	284		101870	553	3884	6234 20
50	48266		168470	208		014317	478	4153	5965 10
11 0	53107	40	081262	132	288	926839	401	4423	5696 04 9
10	57947	41	994130	056	288	839418	326	4692	5427 50
20	62788		907074	86980		752112	250	4962	5157 40
30	67629	40	820094	904		664862	175	5232	4887 30
40	72469	41	733190	828		577687	099	5503	4617 20
50	77310		646362	753		490588	024	5774	4347 10
60	82151		559609			403564		6045	4076 04 8

Grad. 86.

S.M.

Grad. 3.

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M.S.	Sinus.	D.	Logarithm	Differ.	Different.	Differ. Logar.	D.	Sinus.	
12 0	5582151	40	559609	86678	208	403564	156045	9984	4076 60
10	86991	41	472931	602	208	316615	6316	3806 50	
20	91832	40	386329	527		229741	6588	3535 40	
30	96673	41	299802	452		142943	6859	3263 30	
40	560513	40	213350	377		056219	7131	2992 20	
50	06353	41	126973	302	207	969570	7403	2720 10	
13 0	11194	40	640671	227		882995	7676	2448 047	
10	16034	41	954444	153		796496	7948	2176 50	
20	20875	40	868291	079		710070	8221	1904 40	
30	25715	41	782212	005		623718	8494	1631 30	
40	30556	40	696207	85931		537439	8768	1358 20	
50	35396	41	610276	857		451235	9041	1085 10	
14 0	40236	40	524419	782		365104	9315	0812 046	
10	45077	41	438637	702		279048	9585	0538 50	
20	49917	40	352925	634		193066	9863	0265 40	
30	54758	41	267295	561		107157	10132	0 9991 30	
40	59598	40	181734	488		021322	0412	9716 10	
50	64438	41	096241	415	206	935555	0687	9442 10	
15 0	69275	40	011831	342		849869	0962	9167 045	
10	74115	41	925481	265		764251	1238	8892 50	
20	78955	40	840220	190		678707	1513	8617 40	
30	83800	41	755024	124		593235	1789	8341 30	
40	88640	40	669900	051		507835	2065	8066 20	
50	93480	41	584845	34978		422507	2342	7790 10	
16 0	98321	40	499871	905		337252	2619	7514 044	
10	5703161	41	414966	832		252070	2896	7237 50	
20	08001	40	330134	760		166961	3173	6961 40	
30	12841	41	245374	688		081923	3451	6684 30	
40	17681	40	160686	617	208	996958	3728	6407 20	
50	22522	41	076069	546		911064	4005	6129 10	
17 0	27362	40	991523	474		827240	4283	5852 043	
10	32202	41	907049	403		742488	4561	5574 50	
20	37042	40	822646	332		657807	4839	5296 40	
30	41882	41	738314	261		573196	5118	5018 30	
40	46722	40	654053	190		488656	5397	4739 20	
50	51563	41	569863	119		404187	5676	4461 10	
60	56403	40	485744			319788	5956	4182 042	

Grad. 86.

S.M.

Grad. 3.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.
18 0	5756403	+40	435744	84048	319788	84328	165956	+40	418260
10	61243		401696	85977	335460	257	6236		390250
20	66083		317719	907	191203	187	6566		362340
30	70923		233812	836	067016	117	6796		334330
40	75763		149976	765	982899	045	7077		306320
50	80603	+40	066211	694	898854	83975	7357	+40	278310
19 0	85443		982517	623	814879	904	7638		250300
10	90283		898894	552	730975	833	7919		222290
20	95123		815342	481	647142	764	8200		194140
30	99963		731860	413	563378	695	8482		166030
40	5804803	+40	648447	343	479683	625	8764	+40	137920
50	09643		565104	274	396058	556	9046		109710
20 0	14483		481830	204	312502	487	9328		081600
10	19323		398626	135	229015	417	9611		053450
20	24163		315491	065	145598	348	9893		025240
30	29003	+40	232426	81996	062250	279	170176	+40	996830
40	33843		149430	927	978971	210	0459		968620
50	38682		066503	857	895761	141	0741		940310
21 0	43522		983646	788	812620	072	1026		912000
10	48362		900858	710	729548	004	1310		883750
20	53202	+40	818138	632	646544	32937	1594	+40	855340
30	58042		735486	584	563600	868	1879		826930
40	62882		652902	516	480735	801	2163		798520
50	67721		570386	447	397938	732	2448		770110
22 0	72561		487939	379	315206	664	2733	+40	741600
10	77401	+40	405560	312	232542	597	3018		713150
20	82241		323248	245	149945	531	3303		684640
30	87080		241003	178	067414	464	3589		656130
40	91920		158825	110	984950	396	3873		627520
50	96760	+40	076713	042	902554	325	4161	+40	599010
23 0	5901599		994673	81974	820225	261	4448		570400
10	66439		912699	908	737964	192	4735		541750
20	11279		830794	837	655772	124	5022		513140
30	16118		748957	770	573648	058	5309		484430
40	20958	+40	667187	702	491590	81989	5597	+40	455720
50	25798		585485	636	409601	924	5884		427010
60	30637		503849		327677		6172		398300

Grad. 86.

S.M.

Grad. 3.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Log. r.	D.	Sinus.	
24 0	5930637	181	503849	81570	327677	181	176172	181	3983	60
10	35477	181	421279	503	245819	792	6460	181	3695	50
30	40317	39	340776	436	164027	724	6749	88	3407	40
30	45156	40	259340	369	082303	658	7037	89	3119	30
40	49996	39	177971	303	000645	592	7326	90	2831	20
50	54835	40	096668	237	919053	527	7615	90	2542	10
25 0	59675	181	015431	172	837526	461	7905	89	2253	035
10	64514	39	934259	106	756065	396	8194	90	1964	50
30	69354	40	253153	040	674669	330	8484	91	1675	40
30	74193	40	772113	80974	593339	265	8774	91	1386	30
40	79033	39	691139	908	512074	198	9065	90	1096	20
50	83872	40	610231	843	430876	134	9355	91	0806	10
26 0	88712	181	529388	777	349742	068	9646	91	0516	034
10	93551	39	448611	712	268674	003	9937	92	0225	50
30	98390	40	367899	647	187671	80939	180128	92	9934	40
30	6003230	39	287252	581	106731	872	0520	91	9643	30
40	08069	40	206671	515	025860	807	0811	92	9352	20
50	12909	39	126156	449	945053	741	1103	93	9061	10
27 0	17748	181	045707	384	864312	677	1395	93	8769	033
10	22587	40	965323	320	783635	612	1688	92	8472	50
30	27427	39	885003	255	703023	548	1980	93	8185	40
30	32266	40	804748	191	622475	484	2273	94	7893	30
40	37105	40	724557	126	541991	419	2566	95	7600	20
50	41945	39	644431	062	461572	356	2859	94	7308	10
28 0	46784	181	564369	79998	381216	291	3153	93	7015	032
10	51623	40	484371	934	300925	228	3446	94	6721	50
30	56462	39	404437	871	220697	165	3740	95	6428	40
30	61302	40	324566	807	140531	102	4034	96	6134	30
40	66141	39	244759	743	060430	038	4329	97	5840	20
50	70980	40	165016	680	980392	79975	4624	98	5546	10
29 0	75819	181	085336	616	900417	911	4919	99	5251	031
10	80658	40	005720	552	820506	848	5214	96	4957	50
30	85497	39	926168	488	740658	783	5510	95	4662	40
30	90337	40	846680	424	660875	720	5805	96	4367	30
40	95176	39	767256	360	581155	656	6101	97	4071	20
50	6100015	40	687296	297	501499	594	6397	98	3776	10
60	04854	181	608599	233	421905	530	6694	99	3480	030

Grad. 86.

S. M.

E 3

Grad. 3.

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M. S.	Sinus.	D. Logarith. Differ.	Different.	Differ.	Logar.	D.	Sinus.
30 0	6104854	4839	608599	279	421905	186694	608599
10	09693	179	529365	79334	341375	6990	3480
20	14532	450194	171	261907	468	7187	3184
			109		406		2887
30	19371		371085		183501		2591
40	24210		292039	046	104157	344	2294
50	29049		213055	78984	014875	282	1997
				921		219	
31 0	33888		134134	859	945656	157	1700
10	38727		055275	796	866499	095	1402
20	43566		976479	733	787404	031	1105
				671	708373	78970	0807
30	48405		897746	609	619403	908	0508
40	53244		819075	547	550495	846	0210
50	58083		740466				
32 0	62922		661919	486	471649	785	9911
10	67761		583433	425	392864	725	9612
20	72600		505008	364	314139	664	9313
				302	235475	602	9014
30	77435		426644	240	156873	540	8714
40	82274		348342	178	078333	479	8414
50	87116		270102	116	999854	417	8114
33 0	91955		191924	064	921437	365	7814
10	96794		113808	77992	843072	294	7513
20	6101633		035744	931	764778	232	7213
				870	686544	172	6912
30	06472		957752	809	608374	111	6610
40	11311		879821	749	530263	051	6309
50	16149		801951	689	452212	051	6007
34 0	20988		724142	629	374221	77991	5705
10	25827		646393	569	296289	932	5403
20	30666		568704	509	218417	872	5101
				449	140605	812	4798
30	35504		491075	389	062851	693	4495
40	40343		413506	328	985159	632	4192
50	45182		335997	268	907527	572	3889
35 0	50020		258548	208	819955	512	3585
10	54859		181159	149	752443	454	3281
20	59698		103831	089	674589	394	2977
30	64536		026563				2675
40	69375		949355				
50	74213		872206				
60	79052		795117				

Grad. 86.

[S.A.]

Grad. 3.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	
36 0	6279052	39	795117	77030	597595	197522	197522	305	2673	60
10	83891	38	718087	76971	520260	77335	7827	305	2368	50
20	88729	38	641116	911	442984	276	8132	305	2064	40
30	93568	39	564205	851	365768	216	8437	305	1759	30
40	98406	38	487354	789	288611	457	8743	06	1453	20
50	6303245	39	410565	730	211516	095	9049	06	1148	10
37 0	08083	38	333835	672	134479	37	9356	87	0842	023
10	12912	39	257163	613	057501	76978	9662	06	0536	50
20	17760	38	180550	555	980581	920	9969	07	0230	40
30	22598	39	103995	497	903719	862	200276	08	9924	30
40	27437	38	027498	439	826914	805	0584	07	9617	20
50	32275	39	951059	380	750168	746	0891	07	9310	10
38 0	37114	38	874679	322	673480	688	1199	08	9003	022
10	41952	39	798357	263	596850	630	1507	09	8696	50
20	46790	38	712094	204	520278	572	1816	08	8388	40
30	51629	39	645890	146	443766	512	2124	09	8080	30
40	56467	38	569744	087	367311	455	2433	09	7772	20
50	61306	39	493657	029	290915	396	2742	08	7464	10
39 0	66144	38	417628	75971	214577	338	3051	08	7155	021
10	70982	39	341657	914	138297	280	3360	10	6847	50
20	75820	38	265743	856	062073	224	3670	10	6538	40
30	80659	39	189887	798	985907	166	3980	11	6228	30
40	85497	38	114085	740	909795	108	4290	10	5919	20
50	90335	39	038345	683	833745	050	4600	11	5609	10
40 0	95173	38	562666	625	757755	75994	4911	11	5299	020
10	6400012	39	887041	568	681820	935	5221	10	4989	50
20	04850	38	811473	511	605941	879	5532	11	4679	40
30	09688	39	735962	453	530119	822	5843	12	4368	30
40	14526	38	660509	396	454354	765	6155	12	4057	20
50	19364	39	585113	340	378646	708	6467	12	3746	10
41 0	24202	38	509773	283	302994	652	6779	13	3435	019
10	29040	39	434490	226	227399	599	7091	13	3123	50
20	33879	38	359264	169	151360	539	7404	12	2811	40
30	38717	39	284095	113	076379	481	7716	13	2499	30
40	43555	38	208982	056	000953	426	8029	13	2187	20
50	48393	39	133926	74999	925584	369	8342	14	1875	10
60	53231	38	058927	275	850271	313	8656	14	1562	018

Grad. 86.

S.M.

Grad. 3.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different	Differ.	Logar.	D.	Sinus.
42 0	6453131	4838	058927	72942	850271	75255	208656	13	9979
10	58069		983985	636	775016	200	8969	14	1562
20	62907		909099	830	692816	144	9283	15	1249
30	67748		834269	774	624674	089	9597	16	0936
40	72583		759495	717	549583	031	9912	17	0622
50	77421		684778	661	474552	74976	210226	18	0309
43 0	82259	37	610117	605	399576	920	0541	19	9995
10	87097		535512	550	324556	266	0856	20	9680
20	91935		460962	495	249790	810	1171	21	9366
30	96772	38	380467	439	174980	755	1487	22	9051
40	6501610		312028	383	100225	699	1803	23	8737
50	06448		237645	327	025526	643	2119	24	8422
44 0	11285		163328	271	950883	588	2435	25	8106
10	16124		089027	216	876295	532	2752	26	7791
20	20962		014831	161	801763	478	3068	27	7475
30	25800		940670	106	727285	423	3385	28	7159
40	30637		866564	051	652862	369	3702	29	6843
50	35475		792513	3956	578493	313	4020	30	6526
45 0	40313		718517	541	504185	259	4337	31	6209
10	45151		644575	886	429921	204	4655	32	5892
20	49989		570690	831	355717	150	4973	33	5575
30	54827		496554	777	281567	095	5292	34	5258
40	59665		423022	723	207472	041	5610	35	4940
50	64502		349350	668	133430	73987	5929	36	4622
46 0	69339	37	275691	614	059443	533	6248	37	4304
10	74177		202077	559	985510	879	6567	38	3986
20	79014		128518	504	911631	823	6887	39	3667
30	83852		055014	450	837808	770	7206	40	3348
40	88690		981564	395	764038	715	7526	41	3029
50	93527		908169	341	690323	662	7846	42	2710
47 0	98365	37	834828	287	616661	607	8167	43	2390
10	6603202	38	761541	234	543054	555	8487	44	2070
20	08040		688307	180	469499	501	8808	45	1750
30	12878		615127	126	395998	448	9129	46	1430
40	17715		542001	073	322550	395	9451	47	1110
50	22553		468928	019	249155	341	9773	48	0789
60	27390		395909		175814		220095	49	0468

Grad. 86.

S.M.

Grad. 3.

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M. S.	Sinus.	D. Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
48 0	6627330	38 395909	72966	175814	73288	210295	22	80147	601
10	32228	37 312943	913	102526	236	0417	21	9825	50
20	37065	37 250030	859	029290	181	0740	20	9904	40
30	41902	38 177171	805	956109	128	1062	19	9182	30
40	46740	37 104366	752	882981	074	1385	18	3860	20
50	51577	38 031615	698	809907	021	1708	17	8537	10
49 0	56415	37 958917	645	736885	72968	2031	24	8215	011
10	61252	38 886272	592	663917	916	2355	23	7892	50
20	66089	37 813680	540	591001	864	2679	22	7569	40
30	70927	38 741140	487	518137	811	3003	21	7246	30
40	75764	37 668653	435	445326	760	3327	20	6922	20
50	80601	38 596218	383	372566	708	3652	19	6598	10
50 0	85439	37 523835	330	299858	655	3977	18	6274	010
10	90276	38 451505	278	227203	603	4302	17	5950	50
20	95113	37 379227	225	154600	551	4627	16	5626	40
30	99950	38 307004	172	082049	497	4953	15	5301	30
40	6704788	37 234830	120	009552	446	5278	14	4976	20
50	09625	38 162710	068	937106	394	5604	13	4651	10
51 0	14462	37 090642	016	864712	343	5930	12	4325	09
10	19299	38 018616	71963	792369	289	6257	11	4000	50
20	24136	37 946663	910	720080	237	6583	10	3674	40
30	28974	38 874753	858	647843	185	6910	9	3348	30
40	33811	37 802895	806	575658	133	7237	8	3021	20
50	38648	38 731089	755	503525	083	7564	7	2695	10
52 0	43485	37 659334	704	431442	031	7892	6	2368	08
10	48322	38 587630	652	359410	71980	8220	5	2041	50
20	53159	37 515978	600	287430	928	8548	4	1714	40
30	57996	38 444378	549	215502	878	8876	3	1386	30
40	62833	37 372829	498	143624	826	9205	2	1058	20
50	67670	38 301331	447	071798	776	9533	1	0730	10
53 0	72507	37 229884	396	000022	725	9862	0	0402	07
10	77344	38 158488	345	928297	674	230191	29	0074	50
20	82181	37 087143	294	856623	624	0520	28	9745	40
30	87018	38 015849	243	784999	573	0850	27	9416	30
40	91855	37 944606	192	713426	522	1180	26	9087	20
50	96692	38 873414	141	641904	472	1510	25	8758	10
60	6801529	37 802273		570432		1841	31	8428	06

Grad. 86.

S.M.

F

Grad. 3.

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M.S.	Sinns.	D.	Logarith	Differ	Different.	Differ.	Logar.	D.	Sinns.	D.
54 0	6801529	4837	2801273	71090	267	570432	71420	231841	9976	30
10	06366		731183	039		499012	370	2171	8098	31
20	11803		660144			427642	320	2502	7768	32
30	16040		599155	70989		356322	269	2833	7438	33
40	20877	36	518217	938		285053	219	3164	7107	34
50	25713	37	447330	887		213834	169	3496	6776	35
				837		142665	118	3828	6445	36
55 0	30550		376493	786		071547	067	4160	6114	37
10	35387		305707	735		000480	018	4492	5782	38
20	40224		234972	685		929462	70968	4825	5451	39
30	45061	63	164287	635	167	858494	918	5158	5119	40
40	49897	26	093652	585		787576	868	5491	4786	41
50	54734		023067	535		716708	819	5824	4454	42
			952532	486		645889	770	6157	4121	43
56 0	59571	267	882046	436		575119	720	6491	3788	44
10	64408	36	811610	386		504399	670	6825	3455	45
20	69144	37		336		433729	621	7159	3122	46
30	74081		741224	287		363108	572	7493	2788	47
40	78918	36	670888	237		292536	522	7828	2454	48
50	83754	37	600601	187		222014	473	8163	2120	49
			530364	138		151541	424	8498	1786	50
57 0	88591	36	460177	088		081117	374	8834	1451	51
10	93427	37	390039	039		010743	326	9169	1117	52
20	98264			69990		940417	276	9505	0782	53
30	6903101	36	319951	940	167	8870141	227	9841	0446	54
40	07937	37	249912	891		799914	179	10177	0111	55
50	12774	36	179922	842		729735	129	0514	9775	56
				793		659600	081	0850	9439	57
58 0	17610	37	109982	744		589525	033	1187	9103	58
10	22447	36	040091	696		519492	6985	1524	8767	59
20	27283	37	970249	647		449507	936	1862	8430	60
30	32120	36	900456	598		379571	887	2200	8093	61
40	36956	37	830712	549		309684	838	2538	7756	62
50	41793	36	761016	500		239846	791	2876	7419	63
			691369	452		170055	742	3215	7081	64
59 0	46629	37	621771	404		100313	694	3553	6743	65
10	51466	36	552222	355		030619	3892		6405	66
20	56302									
30	61138	37	482722							
40	65975	36	413270							
50	70811		343866							
60	75647		274511							

Grad. 86.

S. A.

Grad. 4.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
0	6975647		2745.11	69308	266.265	030619	243892		6405	60
10	80484	37	205205	258	960974	597	4231	339	6067	50
20	85320	36	135947	210	891377	550	4570	40	5728	40
30	90156	37	066737	161	821827	502	4910		5389	30
40	94993	265	997575	115	752325	455	5250		5050	20
50	99829	4836	928460	68	682870	409	5590	41	4711	10
1	7004665	37	859391	915	613461	359	5931	40	4372	059
10	09501		790373	68973	544101	314	6271	41	4032	50
20	14337		721400	925	474788	266	6612		3692	40
30	19174	37	651475	877	405521	218	6953		3352	30
40	24010	36	583598	825	336304	171	7294	42	3011	20
50	28846		514769	781	267133	123	7636		2671	10
2	33682		445988	734	198010	076	7978		2330	058
30	38518		377254	687	128934	029	8320		1989	50
40	43354		308567	640	059905	68983	8662	43	1647	40
50	48190	37	239927	592	990922	934	9005	42	1306	30
10	53027	36	171335	544	921988	887	9347	43	0964	20
20	57863		101791	496	853101	839	9690		0622	10
30	62699		034295	448	784262	791	10033		0279	057
40	67535	264	965847	401	715471	745	0376	44	9937	50
50	72371		897446	354	646726	698	0720		9594	40
30	77207		829092	307	578028	651	1064		9251	30
40	82043		760785	260	509377	605	1408		8908	20
50	86875	35	692525	213	440772	558	1753	45	8565	10
4	91714	36	624312	166	372214	510	2098	44	8221	056
10	96550		556146	119	303704	464	2442	45	7877	50
20	7101386		488027	073	235240	418	2787		7533	40
30	06222		419954	027	166822	373	3132	46	7188	30
40	11058		351927	67981	098449	326	3478	45	6844	20
50	15894		283946	935	030123	281	3823	46	6499	10
5	20730		216011	889	961842	235	4169		6154	055
10	25566	35	148122	843	893607	189	4515	46	5809	50
20	30401	36	080279	797	825418	144	4861		5463	40
30	35237		012482	751	757274	098	5208	47	5117	30
40	40073		944731	705	689176	052	5555		4771	20
50	44909	265	877026	659	621124	007	5902	48	4425	10
60	49745		809367		553117		6250		4078	054

Grad. 85.

S.M

Grad. 4.

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M.S.	Sinus.	D.	Logarith	Differ	Different.	Differ.	Logar.	D.	Sinus.	D.
6 0	7149744	4836	809367	57612	553117	67959	256150	48	4078	60
10	54580		741755	566	485158	914	6597	47	3731	50
20	59416		674189	520	417244	868	6945	48	3384	40
30	64252	35	606669	475	349376	824	7293	49	3037	30
40	69087	36	539194	430	281557	778	7642	48	2690	20
50	73923		471764	385	213774	734	7990	49	2342	10
7 0	78759	35	404379	340	146040	689	8339		1994	053
10	83594	36	337039	294	078351	643	8688		1646	50
20	88430		269745	248	010708	597	9037		1298	40
30	93265	36	202497	202	943111	552	9386	50	0949	30
40	98101	35	135295	156	875559	506	9736		0600	20
50	7202936	36	668139	110	808053	461	260086	51	0251	10
8 0	07772	35	001029	065	740592	415	0437	50	9903	052
10	12607	36	933964	020	673177	371	0787	51	9552	50
20	17443		866944	6975	605806	326	1138		9202	40
30	22278	36	799969	930	538480	281	1489	52	8852	30
40	27114	35	733039	885	471190	236	1840		8502	20
50	31949	36	666154	840	403963	192	2191	53	8152	10
9 0	36785	35	599314	795	336771	147	2543		7801	051
10	41620	36	532519	750	269624	102	2895	54	7450	50
20	46456	35	465769	706	202522	059	3247		7099	40
30	51291		399063	661	135465	013	3600	53	6747	30
40	56126	36	332402	616	068450	66965	3952	52	6396	20
50	60962	35	265786	571	001481	224	4301	53	6044	10
10 0	65797	36	199215	526	934557	879	4658		5692	050
10	70632		132689	482	867672	836	5011	54	5339	50
20	75468	35	066107	438	800847	792	5365		4987	40
30	80303		999769	394	734050	748	5719		4634	30
40	85138	36	933375	350	667302	704	6073	55	4281	20
50	89973	35	867025	305	600592	660	6427		3927	10
11 0	94809	36	800720	260	533938	615	6782		3774	049
10	99644		734460	215	467323	570	7137	56	3230	50
20	7304475	35	668245	172	400753	527	7492		2866	40
30	09314		601073	128	334226	484	7847	57	2532	30
40	14149	36	535945	085	267742	440	8203	58	2197	20
50	18985	35	469860	041	201302	397	8558	56	1803	10
60	23820		403819		134905		8914		1448	048

Grad. 85.

S.M.

Grad. 4.

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M.S.	Sinus.	D.	Logarith.	Differ.	Differ.	Differ.	Logar.	D.	Sinus.	D.
12	7311810	4835	261 403819	65997	261 134905	66353	268914	356 4973	1448	60
10	28655		337822	954	068552	310	9270	9973	1092	50
20	33490		271868	710	002142	267	9616	57	0737	40
30	38325		205958	867	935975	214	9983		0381	30
40	43160		140091	823	869755	180	270340		0025	20
50	47995		074268	779	803571	136	0697	9972	9669	10
13	52830		008489	736	737435	093	1054		9313	047
10	57665		942753	692	671342	050	1411		8957	50
20	62500	260	877061	649	605192	007	1769		8600	40
30	67335		811412	606	539285	65964	2127		8243	30
40	72170		745806	563	473321	912	2485	59	7885	20
50	77005		680243	520	407399	879	2844		7528	10
14	81840		614723	477	341510	836	3203		7170	046
10	86675		549246	434	275684	793	3562		6812	50
20	91510		483812	390	209891	750	3921	60	6454	40
30	96345	34	418422	347	144141	706	4281	59	6095	30
40	740179	35	353075	304	078435	664	4640	60	5737	20
50	06014		287771	261	012771	621	5000		5378	10
15	10849		222510	218	947150	578	5360		5019	045
10	15684		157292	174	881572	535	5720	61	4659	50
20	20519		092118	131	816037	492	6081		4299	40
30	25353	34	026987	088	750545	449	6442		3939	30
40	30188	35	961895	045	685096	407	6803		3575	20
50	35023	260	896853	002	619689	366	7164	62	3219	10
16	39858	34	831845	64962	554323	324	7526		2859	61 044
10	44693	35	766882	920	488995	282	7888		2498	50
20	49527		701967	878	423717	240	8250		2137	62 40
30	54362	34	637085	835	358475	198	8612	63	1775	61 30
40	59196	35	572254	792	293275	155	8975	62	1414	62 20
50	64031	34	507461	750	228122	114	9337	63	1052	63 10
17	68865	35	442700	708	163010	072	9700		0690	043
10	73700		378001	667	097938	030	280063		0328	50
20	78535	34	313334	625	032908	64989	0428	9971	9966	40
30	83369	35	248709	583	967915	947	0790		9602	30
40	88204	34	184126	542	902977	906	1154		9240	20
50	93038	35	119584	500	838066	865	1518		8877	10
60	97873		055084		773201		1883		8513	04

Grad. 85.

S.M.

Grad. 4.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D	Sinus.	D.
18 0	7497873	34	055084	64456	773101	64820	281883	365	8513	60
10	7502707	35	990628	415	708381	780	2248	365	8150	63
20	07542	34	926213	374	643601	739	2613	365	7786	40
30	12376	34	861839	333	578862	699	2978	66	7422	30
40	17210	35	797506	291	514163	657	3344	65	7057	64
50	22045	34	733215	251	449506	617	3709	66	6693	10
19 0	26879	35	668964	209	384889	575	4075	66	6328	04
10	31714	34	604755	167	320314	533	4441	67	5963	50
20	36548	35	540588	125	255781	491	4807	68	5598	40
30	41382	35	476463	083	191290	450	5173	67	5232	30
40	46217	34	412380	040	126840	407	5540	68	4866	20
50	51051	35	348340	63999	062433	367	5907	68	4500	10
20 0	55885	35	284341	958	998066	325	6275	67	4134	04
10	60719	34	220383	918	933741	286	6642	68	3768	50
20	65554	35	156465	877	869455	245	7010	69	3401	40
30	70388	35	092588	837	805210	205	7378	69	3034	30
40	75222	34	028751	796	741005	165	7746	70	2667	20
50	80056	35	964955	755	676840	124	8115	70	2300	10
21 0	84891	34	901200	714	612716	083	8484	70	1932	039
10	89725	35	837486	673	548633	042	8853	71	1564	50
20	94559	34	773813	633	484591	003	9222	71	1196	40
30	99393	35	710180	592	420588	63961	9592	70	0828	69
40	7604217	34	646588	551	356627	921	9961	69	0459	68
50	09061	35	583037	511	292706	881	190331	70	0091	69
22 0	13895	34	519526	470	228825	840	0701	71	9722	70
10	18729	35	456056	430	164985	801	1071	71	9352	69
20	23563	34	392626	389	101184	759	1442	70	8983	70
30	28397	35	329237	349	037425	720	1812	71	8613	30
40	33231	34	265888	308	973705	679	2183	71	8243	20
50	38065	35	202580	267	910026	639	2554	72	7873	10
23 0	42899	34	139313	227	846387	599	2926	72	7503	037
10	47733	35	076086	187	782788	559	3298	73	7132	50
20	52567	34	012899	147	719229	519	3670	73	6761	40
30	57401	35	949752	107	655710	480	4041	73	6390	30
40	62235	34	886645	067	592230	439	4415	72	6019	20
50	67069	35	823578	026	528791	399	4787	73	5647	10
60	71903	34	760552		465372		5160		5275	036

Grad. 85.

J.S.M.

Grad. 4-

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
24 0	7671903		760552	61986	465392	63359	195160	373	5275	60
10	76737	34	697566	946	402033	319	5533	74	4903	50
20	81570	33	634620	907	338714	281	5906	74	4531	40
30	86404	33	571713	867	275435	241	6280	74	4158	30
40	91238	34	508846	828	212192	202	6654	74	3785	20
50	96073	33	446018	789	148990	163	7028	74	3412	10
25 0	7700906	33	383229	749	085827	124	7402	75	3039	035
10	05739	34	320480	710	022703	084	7777	74	2666	50
20	10573	33	257770	671	959619	046	8151	74	2292	40
30	15407	33	195099	631	896573	006	8526	75	1918	30
40	20240	34	132468	591	833567	62967	8901	76	1544	20
50	25074	33	069877	552	770600	918	9277	76	1170	10
26 0	29908	33	007315	512	707672	888	9653	75	0795	034
10	34741	34	944813	473	644784	850	300029	77	0420	50
20	39575	33	882340	434	581934	810	0406	76	0045	40
30	44408	34	819906	394	519124	771	0782	77	9670	30
40	49242	33	757511	355	456353	732	1159	77	9294	20
50	54076	33	695157	315	393621	692	1536	76	8918	10
27 0	58909	34	632842	276	330929	654	1913	78	8542	033
10	63743	33	570566	238	268275	615	2291	77	8166	50
20	68576	34	508328	199	205660	577	2668	78	7789	40
30	73410	33	446125	160	143083	538	3046	79	7413	30
40	78243	34	383965	121	080545	499	3424	77	7036	20
50	83076	33	321848	082	018046	461	3802	78	6658	10
28 0	87910	33	259766	043	955585	422	4181	79	6281	032
10	92743	34	197723	005	893163	384	4560	80	5903	50
20	97577	33	135718	61967	830779	347	4939	80	5525	40
30	7802410	34	073751	928	768432	307	5319	79	5147	30
40	07243	33	011823	889	706125	269	5698	80	4769	20
50	12077	34	949934	851	643856	231	6078	81	4390	10
29 0	16910	33	888083	813	581625	193	6458	80	4013	031
10	21743	34	826270	774	519432	155	6838	81	3632	50
20	26577	33	764496	736	457277	116	7219	80	3253	40
30	31410	34	702760	697	395161	078	7599	81	2873	30
40	36243	33	641063	658	333083	039	7980	82	2494	20
50	41076	34	579405	620	271044	002	8361	81	2114	10
30	45910	33	517785		209042		8743		1733	030

Grad. 85.

S.M.

Grad. 4.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
30 0	7845910	4033	517785	61581	209042	61963	308743	81	1733	60
10	50743		456203	544	147079	926	9124	80	1353	50
20	55576		394659	506	085153	888	9506	70	0972	40
30	60409		333153	468	023265	850	9888	60	0591	30
40	65242		271685	429	561415	812	310270	50	0210	20
50	70075		210256	391	899603	774	0653	40	9828	10
31 0	74908		148865	354	837829	737	1036	30	9447	029
10	79741		087511	316	776092	700	1419	20	9064	50
20	84574		026195	279	714392	662	1803	10	8683	40
30	89407		964916	241	652730	625	2186	00	8300	30
40	94240		903675	204	591105	588	2570	90	7918	20
50	99073		842471	167	529517	551	2954	80	7535	10
32 0	7903907		781304	128	467966	513	3338	70	7152	028
10	08739		720176	091	406453	475	3723	60	6769	50
20	13572		659085	053	344978	438	4107	50	6385	40
30	18405		598032	015	283540	400	4492	40	6001	30
40	23238		537017	60977	222140	363	4877	30	5617	20
50	28071		476040	940	160777	326	5263	20	5233	10
33 0	32904		415100	903	099451	289	5649	10	4849	027
10	37737		354197	866	038162	252	6035	00	4464	50
20	42570		293331	828	976910	215	6421	90	4079	40
30	47402		232503	790	915695	176	6808	80	3694	30
40	52235		171713	753	854519	140	7194	70	3308	20
50	57068		110960	716	793379	103	7581	60	2923	10
34 0	61901		050244	680	732276	065	7968	50	2537	026
10	66734		989564	643	671208	030	8356	40	2151	50
20	71566		928921	606	610108	60994	8743	30	1764	40
30	76399		868315	569	549184	957	9131	20	1378	30
40	81232		807746	532	488217	920	9519	10	0991	20
50	86064		747214	495	427307	884	9907	00	0604	10
35 0	90897		686719	458	366423	847	320196	90	0216	025
10	95730		626261	422	305576	811	0685	80	9829	50
20	8000562		565859	385	244765	774	1074	70	9441	40
30	05395		505454	349	183991	739	1463	60	9053	30
40	10227		445105	312	123252	701	1853	50	8665	20
50	15060		384793	275	062551	665	2242	40	8276	10
60	19892		324518		001886		2632	30	7888	024

Grad. 85.

S.A.

Grad. 4.

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M. S.	Sinns.	D.	Logarith.	Differ	Different.	Differ.	Logar.	D.	Sinns.	D.
36 0	8019892	33	324518	60239	001888	60629	32652	90	7888	60
10	24725	32	264279	203	941257	594	3022	91	7449	50
20	29557	33	204076	166	880663	556	3413	92	7112	40
30	34390	32	143910	130	820107	521	3803	93	6720	30
40	39222	33	083780	94	759586	485	4194	94	6331	20
50	44055	32	023686	58	699101	450	4585	95	5941	10
37 0	48887	31	963628	59784	638051	412	4977	96	5551	023
10	53710	32	903607	947	578239	376	5368	97	5160	50
20	58552	33	843623	911	517863	339	5760	98	4770	40
30	63384	32	783676	874	457524	304	6152	99	4379	30
40	68217	33	723765	837	397220	266	6545	00	3988	20
50	73049	32	663891	801	336954	230	6937	01	3597	10
38 0	77881	33	604054	766	276724	194	7330	02	3205	022
10	82714	32	544253	731	216530	159	7723	03	2812	50
20	87546	33	484487	695	156371	125	8116	04	2421	40
30	92378	32	424756	660	096246	89	8510	05	2029	30
40	97210	33	365061	625	036157	54	8904	06	1637	20
50	102041	32	305401	590	976103	19	9298	07	1244	10
39 0	06874	33	245776	554	916084	59985	9692	08	0851	021
10	11707	32	186186	518	856099	948	330087	09	0458	50
20	16539	33	126632	483	796151	913	0481	10	0065	40
30	21371	32	067114	447	736238	878	0876	11	9671	30
40	26203	33	007631	411	676360	842	1271	12	9277	20
50	31035	32	948184	375	616518	807	1666	13	8883	10
40 0	35867	33	888773	338	556711	771	2062	14	8485	020
10	40699	32	829398	302	496940	734	2458	15	8094	50
20	45531	33	770060	266	437206	695	2854	16	7699	40
30	50363	32	710758	230	377507	662	3251	17	7304	30
40	55195	33	651492	195	317845	627	3647	18	6909	20
50	60027	32	592262	161	258218	592	4044	19	6514	10
41 0	64859	33	533067	126	198626	558	4441	20	6118	019
10	69691	32	473906	92	139068	524	4838	21	5722	50
20	74523	33	414780	57	079544	489	5236	22	5326	40
30	79355	32	355688	249	020055	455	5633	23	4929	30
40	84187	33	296631	214	960600	420	6031	24	4533	20
50	89019	32	237609	178	901180	387	6429	25	4136	10
60	93851	33	178621	143	841793	352	6828	26	3739	018

Grad. 85.

S.M.

G

Grad. 4.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
42 0	8193851	32	178621	58952	249	841793	336828	399	90663739	60
10	98685	31	0119669	917	249	781442	7227	399	3341	98
20	8203514	31	060752	882	249	723126	316	400	2944	97
30	08346	4832	001870	847	249	663845	281	400	2546	398
40	13178	249	943023	812	249	604598	247	400	2148	30
50	18010	31	884211	777	249	545387	211	400	1749	20
43 0	22841	31	825434	742	249	486110	177	400	1351	99
10	27673	31	766692	707	249	427068	142	400	0952	98
20	32505	31	707985	673	249	367960	108	400	0553	99
30	37337	31	649312	639	249	308887	073	400	0154	99
40	42168	31	590673	605	249	249847	040	400	9754	017
50	47000	31	532068	569	249	190841	006	400	9395	50
44 0	51831	31	473499	534	249	131871	58970	400	8955	40
10	56663	31	414965	500	249	072935	936	400	8555	30
20	61495	31	356465	465	249	014034	901	400	8154	20
30	66326	31	298000	431	249	955167	867	400	7754	10
40	71158	31	239569	397	249	896334	833	400	7353	01
50	75989	31	181172	364	249	837534	800	400	6952	01
45 0	80821	31	122808	339	249	778767	767	400	6550	01
10	85652	31	064479	294	249	720035	732	400	6149	01
20	90484	31	006185	259	249	661338	697	400	5747	01
30	95315	31	947926	225	249	602675	663	400	5345	01
40	8300146	31	889701	191	249	544047	628	400	4942	01
50	04978	31	831510	157	249	485452	595	400	4540	01
46 0	09809	31	773353	123	249	426891	561	400	4137	01
10	14641	31	715230	089	249	368363	528	400	3734	01
20	19472	31	657141	055	249	309870	493	400	3331	01
30	24303	31	599086	022	249	251410	460	400	2928	01
40	29135	31	541064	989	249	192983	427	400	2524	01
50	33966	31	483075	955	249	134585	394	400	2120	01
47 0	38797	31	425120	921	249	076128	361	400	1716	01
10	43638	31	367199	887	249	017901	327	400	1311	01
20	48460	31	309312	853	249	959608	293	400	0907	01
30	53291	31	251459	819	249	901348	260	400	0502	01
40	58122	31	193640	784	249	843123	225	400	0097	01
50	62953	31	135856	751	249	784932	191	400	9691	01
60	67784	31	078105	717	249	726774	158	400	9286	01

Grad. 85.

S. M.

Grad. 4

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
48 0	8167784	31	078105	57718	726774	58135	351331	07	99286	60
10	71615	32	010387	685	668649	093	1738	08	98880	50
20	77447	32	962702	652	610556	059	2146	07	98474	40
30	81278	4831	905050	618	552497	026	2553	408	8008	30
40	87109	31	847432	584	494471	57992	2961	408	7661	20
50	91940	31	789848	551	436479	960	3369	09	7255	10
49 0	96771	31	732297	518	378519	926	3778	08	6848	011
10	8401601	31	674779	485	320593	894	4186	09	6440	08
20	06433	31	617294	451	262699	860	4595	10	6033	40
30	11264	30	559843	418	204839	828	5004	10	5625	30
40	16095	31	502425	384	147011	793	5414	09	5217	20
50	20926	31	445041	351	089218	761	5823	10	4809	10
50 0	25757	30	387690	319	031457	729	6233	11	4401	09
10	30387	31	330371	286	973728	697	6643	11	3992	50
20	35418	31	273085	252	916031	662	7054	10	3583	40
30	40249	30	215833	218	858369	628	7464	11	3174	30
40	45080	31	158615	185	800740	596	7875	10	2765	20
50	49911	31	101430	152	743144	563	8286	09	2355	10
51 0	54742	30	044278	120	685581	532	8697	12	1946	09
10	59572	31	987158	088	628046	498	9105	11	1536	50
20	64403	31	930075	055	570550	465	9520	12	1125	40
30	69234	30	873015	022	513083	432	9932	13	0715	30
40	74064	31	815992	56990	455648	400	360344	13	0304	20
50	78895	31	759002	957	398246	370	0756	13	9893	10
52 0	83726	30	702045	924	340876	337	1169	14	9482	08
10	88557	31	645121	892	283536	305	1582	14	9071	50
20	93387	31	588225	859	226234	273	1995	14	8659	40
30	98218	30	531370	827	168961	240	2409	13	8247	30
40	850348	31	474543	794	111721	208	2822	14	7835	20
50	07879	31	417740	761	054513	175	3236	13	7423	10
53 0	12709	31	360988	729	997338	144	3650	15	7010	07
10	17540	30	304259	697	940194	111	4065	14	6597	50
20	22370	31	247562	665	883083	080	4479	15	6184	40
30	27201	30	190897	633	826003	048	4894	16	5770	30
40	32031	31	134264	600	768955	015	5309	15	5358	20
50	36862	30	077664	568	711940	56984	5724	15	4944	10
60	41692	30	021096		654956		6140		4529	06

Grad. 84

[S.M.]

Grad. 4.

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M.S.	Sinus.	D.	Logarith	Differ	Different.	Differ.	Logar.	D.	Sinus.	D.	
54 0	8541692	31	6021096	56535	245	654956	56951	366140	4530	15	60
10	46523	30	964561	502	245	598005	6556	6556	4115	14	50
20	51353	245	908059	470	541087	918	6972	6972	3701	415	40
30	56183	31	851589	437	484201	886	7388	7388	3286	415	30
40	61014	30	795152	404	427347	854	7805	7805	2871	415	20
50	65844	30	733748	372	370527	820	8221	8221	2456	415	10
55 0	70674	11	682376	341	313738	789	8638	8638	2041	16	0 5
10	75505	4830	626035	310	256980	758	9055	9055	1625	18	50
20	80335	31	569725	278	200252	728	9473	9473	1209	17	40
30	85165	30	513447	247	143557	695	9890	9890	0793	18	30
40	89995	31	457200	216	086892	665	370308	370308	0377	17	20
50	94826	30	400984	184	030258	634	0726	0726	9960	17	10
56 0	99656	244	344800	152	973656	602	1144	1144	9543	19	0 4
10	8604486	244	288648	120	917085	571	1563	1563	9126	18	50
20	09316	244	232528	088	860547	538	1981	1981	8705	19	40
30	14146	31	176440	056	804040	507	2400	2400	8292	18	30
40	18976	30	120384	023	747565	475	2819	2819	7874	20	20
50	23807	30	064361	5992	691122	443	3239	3239	7456	21	10
57 0	28637	244	008369	961	634710	412	3659	3659	7038	19	0 3
10	33467	244	952408	930	578329	381	4079	4079	6619	21	50
20	38297	244	896478	898	521978	351	4500	4500	6201	20	40
30	43127	244	840580	867	465660	318	4920	4920	5782	19	30
40	47957	244	784713	835	409372	288	5341	5341	5362	21	20
50	52787	244	728878	804	353116	256	5762	5762	4943	20	10
58 0	57617	29	673074	773	296891	225	6183	6183	4523	22	0 2
10	62446	30	617301	742	240696	195	6605	6605	4104	21	50
20	67276	30	561559	711	184533	163	7026	7026	3684	22	40
30	72106	30	505848	679	128400	133	7448	7448	3263	21	30
40	76936	30	450169	648	072295	101	7870	7870	2843	21	20
50	81766	30	394521	616	016225	70	8292	8292	2422	21	10
59 0	86596	243	338905	585	960190	039	8715	8715	2001	13	0 1
10	91426	243	283320	554	904182	008	9138	9138	1580	24	50
20	96255	243	227766	523	848205	5977	9561	9561	1158	22	40
30	8701085	30	172243	491	792258	947	9985	9985	0736	24	30
40	05915	30	116752	461	736344	914	380408	380408	0314	23	20
50	10745	19	061291	430	680459	885	0832	0832	9892	24	10
60	15574	19	005862	400	624605	854	1256	1256	9470	19	0 0

Grad. 85.

S.M.

Grad. 5.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
0	8715574	30	4005861	55399	624605	55823	381256	24	9470	60
10	20404	29	950462	368	568782	793	1680	24	99047	50
20	25234	29	950462	368	512989	793	2105	25	8614	40
30	30063	30	839757	337	457228	731	2529	24	8201	30
40	34893	29	784451	276	401497	701	2954	25	7778	20
50	39722	30	729175	245	345796	671	3379	24	7354	10
1	44552	30	673930	215	290125	641	3805	24	6930	059
10	49382	29	618715	184	234484	610	4231	25	6506	50
20	54211	30	563531	152	178874	578	4657	24	6082	40
30	59041	29	508379	122	123296	549	5083	27	5657	30
40	63870	30	453257	91	067747	517	5510	26	5233	20
50	68700	29	398166	060	012230	487	5936	27	4808	10
2	73529	30	343106	030	956743	457	6363	28	4382	058
10	78358	29	288076	000	901286	427	6790	26	3957	50
20	83188	30	233076	969	845859	397	7217	27	3531	40
30	88017	29	178107	939	790462	367	7645	28	3105	30
40	92847	30	123168	909	735095	337	8073	29	2679	20
50	97676	29	068259	879	679758	307	8501	27	2253	10
3	8801505	30	013380	848	624451	277	8929	29	1826	057
10	07335	29	958532	818	569174	246	9358	28	1399	50
20	12164	30	903714	787	513928	216	9786	29	0972	40
30	16993	29	848927	757	458712	186	99215	29	0545	30
40	21822	30	794170	727	403526	157	0644	30	0117	20
50	26652	29	739443	696	348366	126	1074	31	968	10
4	31481	30	684747	666	293243	096	1504	30	9261	056
10	36310	29	630081	636	238147	066	1934	31	8833	50
20	41139	30	575445	606	183081	037	2364	31	8405	40
30	45968	29	520839	577	128044	007	2795	30	7976	30
40	50797	30	466263	547	073037	45978	3225	31	7547	20
50	55627	29	411715	517	018059	948	3656	31	7118	10
5	60456	30	357198	488	963111	919	4087	32	6688	055
10	65285	29	302710	458	908192	890	4518	32	6258	50
20	70114	30	248252	428	853302	860	4950	31	5828	40
30	74943	29	193824	398	798442	830	5382	33	5398	30
40	79772	30	139426	368	743612	800	5814	31	4968	20
50	84601	29	085058	338	688812	771	6246	30	4537	10
60	89430	30	030720	308	634041	6679	6679	30	4107	054

Grad. 84.

S.M.

Grad. 5.

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M. S.	Sinus.	D. Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
6 0	8889430	29	2030720	54306	2614241	396679	33	9064107	60
10	94259		976414	274	579302	7111	33	3675	50
20	99088	28	921140	244	524595	545	34	3144	40
30	8903916	28	867896	218	469917	7979	33	2813	30
40	08745	28	813678	190	415266	8412	34	2381	20
50	13574	29	759488	159	360642	8846	34	1949	10
7 0	18403		705329	138	306049	9280		1517	33
10	23232		651191	95	251477	9714	35	1084	50
20	28061	18	597096	68	196947	400149	35	0651	40
30	32889	19	543028	42	142445	0583	34	0218	30
40	37718	28	488986	11	087968	1018	35	9785	20
50	42547	28	434975	83	033522	1453	36	9352	10
8 0	47375	29	380992	954	979103	1889	35	8918	05
10	52204	28	327035	924	924714	2324	36	8484	50
20	57032	28	273114	892	870354	2760	36	8050	40
30	61861	28	219222	866	816026	3196	37	7616	30
40	66690	28	165356	836	761723	3633	36	7181	20
50	71519	28	111520	807	707451	4069	37	6746	10
9 0	76347	29	057713	777	653207	4506		6311	05
10	81176	28	002936	748	598993	4943	38	5876	50
20	86004	28	950182	719	544807	5381	37	5440	40
30	90832	28	896465	690	490651	5818	38	5005	30
40	95661	28	842775	661	436523	6256	38	4569	20
50	00490	28	789152	632	382424	6694	37	4132	10
10 0	05318	29	735480	603	328354	7132	39	3696	05
10	10147	28	681883	574	274312	7571	38	3259	50
20	14975	29	628309	545	220300	8009	39	2822	40
30	19804	28	574764	516	166316	8448		2385	30
40	24632	28	521248	487	112361	8887	40	1918	20
50	29460	29	467761	458	058435	9326	40	1510	10
11 0	34289	28	414303	429	004537	9766		1072	049
10	39117	28	360874	401	950668	10206	41	0634	50
20	43945	28	307473	373	896827	0646	41	0196	40
30	48773	29	254100	345	843013	1087	40	9757	30
40	53602	28	200755	316	789228	1527	41	9318	20
50	58430		147439	287	735471	1968		8879	10
60	63258		094151		681743	2409		8440	048

Grad. 84.

S.M.

Grad. 5.

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V. S.	Sinus.	D.	Logarith.	Differ.	Different	Differ.	Logar	D	Sinus.	D.
2 0	9063258	4 21 20	2094152	53259	681743	53701	412409	42	8440	60
10	68086		0040893	230	628042	671	2851	42	8000	50
20	72914		957663	201	574371	643	3292	41	7560	40
30	77742	19	904462	172	520728	614	3734	42	7120	30
40	82571	28	851290	143	467114	585	4176	42	6680	20
50	87399		798147	115	413529	558	4618	43	6240	10
3 0	92227		745032	086	359971	529	5061	43	5799	047
10	97055		691946	058	306442	501	5504	44	5358	50
20	9101883		638888	029	252941	472	5947	44	4917	40
30	06711		585859	001	199469	445	6390	44	4476	30
40	11539		532858	973	146024	416	6834	43	4034	20
50	16367		479885	945	092608	389	7277	44	3592	10
4 0	21195		426940	917	039219	361	7721	44	3150	046
10	26023	27	374023	889	985858	334	8165	45	2708	50
20	30850	28	321134	860	932524	304	8610	44	2265	40
30	35678		268274	832	879220	277	9054	45	1823	30
40	40506		215442	805	825943	250	9499	45	1380	20
50	45334		162637	777	772693	223	9944	46	0936	10
5 0	50162		139860	749	719470	194	420390	45	0493	045
10	54990	27	087112	720	666276	166	0835	46	0049	50
20	59817	28	034391	692	613110	138	1281	46	9605	40
30	64645		981695	664	559972	111	1727	47	9161	30
40	69473		929035	635	506861	082	2174	46	8716	20
50	74301	27	876400	607	453780	054	2620	47	8272	10
6 0	79128	28	823793	579	400726	026	3067	47	7827	044
10	83956		771214	552	347700	000	3514	48	7382	50
20	88784	17	718662	524	294700	52971	3962	47	6936	40
30	93611	28	666238	496	241729	944	4409	48	6491	30
40	98439	27	613642	468	188785	916	4857	48	6045	20
50	9203266	28	561174	441	135865	889	5305	49	5599	10
7 0	08094	27	508733	413	082980	862	5753	49	5153	043
10	12921	28	456320	386	030118	834	6202	48	4706	50
20	17749	27	403934	358	977284	807	6650	49	4259	40
30	22576	28	351576	330	924477	779	7099	50	3812	30
40	27404	27	299246	303	871698	752	7548		3365	20
50	32231	28	246943	275	818946	725	7997		2918	10
60	37059		194668		766222		8447		2470	042

Grad. 89.

S.M

Grad. 5.

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M. S	Sinus.	D.	Logarith	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
18 0	9137059	27	194668	2248	766221	52698	428447	10	2470	60
10	41886	28	142420	220	713523	679	8897	10	2022	50
20	46714	27	090200	193	660551	644	9347	10	1574	40
30	51541	28	038007	165	608209	615	9798	10	1125	30
40	56368	27	985842	138	555594	589	430248	10	0677	20
50	61196	28	933704	111	503005	562	0699	10	0228	10
19 0	66023	27	881593	084	450443	535	1150	10	9779	041
10	70650	28	829509	056	397908	508	1601	10	9329	50
20	75677	27	777553	028	345400	479	2053	10	8880	40
30	80505	28	725425	001	292921	453	2504	10	8430	30
40	85332	27	673424	1974	240468	426	2956	10	7980	20
50	90159	28	621450	946	188042	399	3408	10	7530	10
20 0	94986	27	569504	919	135643	372	3861	10	7079	040
10	99813	28	517585	892	083271	345	4314	10	6628	50
20	9304640	27	465693	865	030926	318	4767	10	6177	40
30	09467	28	413828	838	978608	292	5220	10	5726	30
40	14295	27	361999	811	926316	264	5674	10	5275	20
50	19122	28	310175	784	874052	238	6127	10	4823	10
21 0	23549	27	258395	757	821814	211	6581	10	4373	039
10	28776	28	206638	729	769603	184	7035	10	3919	50
20	33603	27	154905	701	717419	156	7490	10	3466	40
30	38430	28	103202	675	665263	130	7944	10	3014	30
40	43256	27	051532	648	613133	103	8399	10	2561	20
50	48083	28	999884	621	561030	076	8854	10	2108	10
22 0	52910	27	948263	594	508954	049	9309	10	1655	038
10	57737	28	896669	568	456905	024	9764	10	1201	50
20	62564	27	845101	542	404881	51998	440220	10	0747	40
30	67391	28	793559	515	352883	971	0676	10	0293	30
40	72218	27	742044	488	300912	945	1132	10	9839	20
50	77044	28	690556	461	248967	918	1589	10	9384	10
23 0	81871	27	639095	434	197049	891	2046	10	8930	037
10	86698	28	587661	407	145158	864	2503	10	8475	50
20	91525	27	536254	381	093294	839	2960	10	8020	40
30	96351	28	484873	355	041455	812	3418	10	7564	30
40	940128	27	433518	328	989643	786	3875	10	7108	20
50	06005	28	382190	301	937857	759	4333	10	6652	10
60	10831	27	330889	274	886098	732	4791	10	6196	036

Grad. 84.

15. M

Grad. 5.

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M. S.	Sinus.	D.	Logarith	Differ.	Different.	Differ.	Logar.	D	Sinus.	D
24 0	9410831	27	330889	51275	886098	51734	44791	59	6196	60
10	15658	26	279614	248	834364	606	5250	58	5740	50
20	10425	25	218366	222	782653	681	5708	57	5183	40
30	25311	24	177144	196	730977	655	6167	459	4827	30
40	30138	23	125948	169	679322	628	6626	60	4370	20
50	34964	22	074779	142	627694	602	7085	60	3912	10
25 0	39791	21	023637	116	576092	576	7545	61	3455	035
10	44617	20	972521	090	524516	550	8005	60	2997	50
20	49444	19	921431	064	472966	525	8465	61	2539	40
30	54270	18	870367	037	421441	497	8926	60	2081	30
40	59096	17	819330	011	369944	472	9386	61	1623	20
50	63923	16	768319	0984	318472	445	9847	61	1164	10
26 0	68749	15	717335	958	267027	419	450308	62	0705	60
10	73576	14	666377	932	215608	394	0769	61	0245	50
20	78403	13	615445	906	164214	367	1231	61	9786	40
30	83228	12	564539	880	112847	342	1692	62	9326	30
40	88054	11	513659	854	061505	316	2154	62	8866	20
50	92881	10	462805	828	010185	291	2616	63	8406	10
27 0	97707	9	411977	802	958898	265	3079	63	7946	033
10	9502533	8	361175	775	907633	238	3541	62	7485	50
20	07359	7	310400	749	856395	213	4005	64	7025	40
30	12185	6	259651	723	805182	186	4469	63	6564	30
40	17012	5	208928	697	753996	160	4932	64	6102	20
50	21838	4	158231	671	702836	135	5395	64	5641	10
28 0	26664	3	107560	645	651701	109	5859	65	5179	032
10	31490	2	056915	620	600592	085	6323	65	4717	50
20	36316	1	006295	594	549507	058	6788	64	4255	40
30	41142	0	955701	568	498449	033	7252	65	3792	30
40	45968	29	905233	542	447416	007	7717	66	3330	20
50	50794	28	854591	516	396409	5081	8182	66	2867	10
29 0	55620	27	804075	491	345428	957	8647	66	2404	031
10	60446	26	753584	465	294471	930	9113	65	1940	50
20	65272	25	703119	440	243541	906	9578	66	1477	40
30	70098	24	652679	414	192635	880	460044	67	1013	30
40	74924	23	602165	388	141755	855	0510	67	0549	20
50	79749	22	551877	362	090900	829	0977	67	0084	10
60	84575	21	501515		040071		1444	68	9620	30

Grad. 84

S.M.

H

Grad. 5.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
30 °	9584575	4816	501515	50336	4040071	50803	461444	457	9620	60
10	89401		451179	310	989268	777	1911	457	9156	50
20	94227		400869	285	938491	753	2378	68	8690	40
30	99053	25	350584	260	887738	727	2846	67	8225	30
40	9603878	26	300324	236	837011	704	3313	68	7759	20
50	08704		250088	211	786307	679	3781		7294	10
31 °	13530	25	199877	185	735628	653	4249	69	6828	66
10	18355	26	149692	159	684975	628	4717	69	6361	50
20	23181		099533	133	634347	601	5186	68	5895	40
30	28007	25	049400	108	583746	577	5654	69	5428	30
40	32833	26	999292	083	533169	552	6123		4961	20
50	37658	25	949209	057	482617	527	6592	70	4494	10
32 °	42483	26	899151	032	432090	501	7062	69	4027	68
10	47309	25	849120	007	381589	477	7531	70	3559	50
20	52134	26	799113	49982	331112	452	8001		3091	40
30	56960	25	749131	957	280660	428	8471	71	2623	30
40	61785	26	699174	932	230232	403	8942		2155	20
50	66611	25	649242	907	179829	378	9413	69	1687	10
33 °	71436	26	599335	882	129451	353	9884	72	1218	68
10	76262	25	549453	856	079098	327	470355		0749	50
20	81087		499597	830	028771	302	0826	73	0280	40
30	85912	26	449767	805	978469	277	1298	9952	9810	30
40	90738	25	399962	780	928192	252	1770		9340	20
50	95563		350182	756	877940	229	2242	73	8870	10
34 °	9700388	26	300426	731	827711	203	2715	72	8400	68
10	05214	25	250695	706	777508	179	3187	73	7930	50
20	10039		200989	681	727329	154	3660		7459	40
30	14864	26	151308	656	677175	130	4133	74	6988	30
40	19689	25	101652	631	627045	105	4607		6517	20
50	24514		052021	606	576940	080	5081	72	6046	10
35 °	29340	25	002455	581	526860	055	5555	75	5574	68
10	34165	26	952834	556	476805	031	6029	75	5102	50
20	38990		903278	532	426774	006	6504	74	4630	40
30	43815	26	853746	507	376768	49982	6978	75	4158	30
40	48640	25	804239	482	326786	957	7453		3686	20
50	53465		754757	457	276829	932	7928		3213	10
60	58290		705300		226897		8403		2740	024

Grad. 84.

S.M.

Grad. 5.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
36 °	9758290	4021	705300	49433	116897	49909	478403	76	2740	60
10	63115		655867	408	176988	883	8879	75	2267	73
20	67940		606459	383	127105	859	9354	75	1793	74
30	72765		557076	358	077146	834	9830	75	1320	30
40	77590		507718	334	027412	810	10306	75	0846	20
50	82415		458384	310	977602	787	0782	77	0371	10
37 °	87240	24	405074	286	927815	763	1259	77	9897	023
10	91064	25	359788	262	878052	739	1736	77	9413	50
20	96889		310516	237	828113	715	2213	78	8948	40
30	9801714		261289	212	778598	689	2691	77	8473	30
40	06539		212077	187	728909	665	3168	78	7997	20
50	11364		162890	161	679247	640	3646	78	7522	10
38 °	16188	24	113718	138	629604	617	4124	79	7046	022
10	21013	25	064590	114	579987	592	4603	78	6570	50
20	25838		015476	090	530395	569	5081	79	6094	40
30	30663	24	966386	066	480816	545	5560		5617	30
40	35487	25	917320	041	431281	520	6039		5141	20
50	40312	24	868279	016	381761	496	6518	80	4664	10
39 °	45136		819263	48992	332265	472	6998		4186	021
10	49960	25	770271	968	282793	448	7478		3709	50
20	54785		721303	944	233345	424	7958		3231	40
30	59610	24	672359	920	183921	401	8438	81	2753	30
40	64434	25	623439	896	134520	376	8919	80	2275	20
50	69259	24	574543	872	085144	353	9399	81	1797	10
40 °	74083	25	525671	848	035791	329	9880		1318	020
10	78908	24	476823	824	986462	306	10361	82	0839	50
20	83732		427999	800	937156	281	0843	81	0360	40
30	88556	25	379199	775	887875	257	1324	82	9881	30
40	93381	24	330424	751	838618	233	1806	80	9402	20
50	98205	25	281673	727	789385	209	2288		8922	10
41 °	9903030	24	232946	703	740176	185	2770		8442	019
10	07854		184243	679	690991	162	3252	83	7962	50
20	12678		135564	656	641829	139	3735		7481	40
30	17502	25	086908	632	592690	115	4218		7000	30
40	22327	24	038276	608	543575	92	4701	84	6519	20
50	27151		989668	584	494483	68	5185		6038	10
60	31975		0941084		445415		5669		5557	018

Grad. 84.

S.M.

Grad. 5.

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M. S.	Sinus. D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
42 0	9931975	4824	941084	48561	445415	495669	84	995557	4824
10	36799	0892523	537	0396370	012	6153	85	5075	082
20	41623	843986	513	347348	48997	6638	84	4593	40
30	46447	795473	489	298351	974	7122	45	4111	30
40	51271	746984	464	249377	949	7607	85	3629	20
50	56095	698520	440	200428	925	8092	86	3146	10
43 0	60919	650085	416	151503	902	8577	86	2664	017
10	65743	601664	392	102601	877	9063	85	2181	83
20	70567	553272	369	053724	855	9548	86	1697	84
30	75391	504903	345	004869	831	500034	87	1214	83
40	80215	456558	322	956038	808	0520	88	0730	84
50	85039	408236	299	907230	786	1006	87	0246	10
44 0	89863	359937	276	858444	763	1493	88	9762	85
10	94687	311661	253	809681	740	1980	87	9277	84
20	99511	263408	230	760941	718	2467	88	8793	85
30	10004335	215178	207	712223	694	2955	87	8308	30
40	09159	166971	184	663529	672	3442	88	7823	10
50	13982	118787	160	614857	648	3930	89	7337	85
45 0	18806	070627	136	566209	625	4418	89	6852	86
10	23630	022491	113	517584	601	4907	88	6366	85
20	28454	974378	089	468983	578	5395	89	5880	40
30	33277	926289	065	420405	554	5884	90	5394	87
40	38101	878224	042	371851	531	6373	91	4907	20
50	42925	830182	018	323320	508	6862	92	4420	10
46 0	47748	782164	018	274812	484	7352	89	3933	014
10	52572	734169	47995	226328	462	7841	90	3446	88
20	57395	686197	971	177866	439	8331	91	2958	87
30	62219	638248	949	129427	417	8821	92	2471	86
40	67042	590322	926	081010	394	9312	93	1983	85
50	71866	542419	903	032616	370	9803	94	1495	84
47 0	76689	494540	879	984246	348	510294	92	1006	83
10	81513	446684	856	935898	323	0786	91	0518	82
20	86336	398852	832	887575	301	1277	92	0029	81
30	91160	351043	809	839274	277	1769	93	9540	80
40	95983	303257	786	790997	256	2260	94	9050	79
50	10100806	255493	764	742741	234	2752	95	8561	78
60	05630	207751	742	694507		3244		8071	77

Grad. 84.

S.M.

Grad. 5.

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M.S.	Sinus.	D.	Logarith.	Differ.	Differens.	Differ.	Logar.	D.	Sinus.	D.
48 0	10105630		207751		694507		513244		8071	60
10	104553	23	160033	47718	646297	48210	3736	92	7581	50
20	15276		112338	695	598109	188	4229		7090	40
30	20100	24	064667	671		164	4722	4931	6600	30
40	24923		017019	648	549945	142	5216	94	6109	20
50	29746		969394	625	501803	118	5709	93	5618	10
49 0	34569		921792	602	453685	096	6203	94	5127	0 11
10	39392		874212	580	405589	074	6697		4636	50
20	44215		826654	558	357515	053	7192	95	4144	40
30	49039	24	779119	535	309462	029	7686	94	3652	30
40	53862	23	731607	512	261433	007	8181	95	3160	20
50	58685		684118	489	213426	47984	8676		2667	10
50 0	63508		636652	466	165442	961	9171		2175	0 10
10	68331		589209	443	117481	939	9667	96	1682	50
20	73154		541789	420	069542	915	10162	95	1189	40
30	77977		494392	397	021627	893	0658	96	0695	30
40	82800		447017	375	973734	871	1154		0202	20
50	87623		399665	352	925865	849	1651	97	9708	10
51 0	92446	22	352336	329	878014	825	2147	96	9214	0 9
10	97268		305030	306	830189	803	2644	97	8720	50
20	10202091	23	257746	284	782386	781	3141		8225	40
30	06914		210484	261	734605	759	3638		7731	30
40	11737		163245	239	686846	737	4136	98	7236	20
50	16560		116028	217	639109	714	4633	97	6740	10
52 0	21382	22	068833	195	591395	693	5131	98	6245	0 8
10	26205	23	021660	173	543702	671	5629		5749	50
20	31028		974510	150	496031	649	6128	99	5253	40
30	35851	22	927382	128	448382	626	6626	98	4757	30
40	40673	23	880276	106	400756	605	7125	99	4261	20
50	45496		833193	083	353151	582	7624		3764	10
53 0	50318	23	786133	060	305569	560	8124	100	3268	0 7
10	55141		739096	037	258009	536	8623		2770	50
20	59964		692082	014	210473	514	9123		2273	40
30	64786	22	645091	46991	162959	491	9623		1776	30
40	69609	23	598122	969	115468	470	10124	01	1278	20
50	74431		551175	977	067998	448	0615		0780	10
60	79254	23	504250	925	020550	426	1126		0282	0 6
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S.M.

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M.S.	Sinu.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinu.	D.
54 0	10279254	22	504250	46903	973124	7405	531126	502	70282	60
10	84076	21	2457347	881	925719	383	1618	501	9783	50
20	88898	23	410466	858	878336	359	2130	01	9284	40
30	93721	21	363608	836	830977	338	2631	02	8785	30
40	98543	23	316772	814	783639	316	3133	03	8286	20
50	10303366	22	269958	792	736323	294	3635	04	7787	10
55 0	08188	23	223166	770	689029	273	4137	05	7287	0
10	13010	21	176396	748	641756	250	4640	06	6787	50
20	17832	23	129648	726	594506	229	5142	07	6287	40
30	22655	22	082122	704	547277	207	5645	08	5787	30
40	27477	23	036218	682	500070	186	6148	09	5286	20
50	32299	21	989536	660	452884	164	6652	10	4786	10
56 0	37121	23	942876	638	405720	142	7156	01	4285	0
10	41943	22	896238	616	358578	120	7660	02	3783	50
20	46766	21	849622	594	311458	099	8164	03	3282	40
30	51588	23	803028	572	264359	076	8669	04	2780	30
40	56410	22	756456	550	217283	055	9173	05	2278	20
50	61232	21	709906	529	170228	034	9678	06	1776	10
57 0	66054	23	663377	507	123194	013	10183	07	1273	0
10	70876	22	616870	485	076121	0690	0689	08	0771	50
20	75698	21	570385	463	029191	969	1194	09	0268	40
30	80520	23	523922	441	982222	947	1700	10	9765	30
40	85342	22	477481	419	935275	926	2206	01	9261	20
50	90164	21	431062	397	888349	903	2713	02	8758	10
58 0	94986	23	384665	376	841446	883	3219	03	8254	0
10	99807	22	338289	354	794563	861	3726	04	7750	50
20	10404619	21	291935	332	747702	839	4233	05	7245	40
30	09451	23	245603	311	700863	819	4740	06	6741	30
40	14273	22	199292	289	654044	796	5248	07	6236	20
50	19095	21	153003	267	607248	775	5755	08	5731	10
59 0	23916	23	106736	246	560473	754	6263	09	5226	0
10	28738	22	060490	224	513719	733	6771	10	4720	50
20	33560	21	014266	203	466986	711	7280	01	4215	40
30	38381	23	968063	181	420275	690	7788	02	3709	30
40	43203	22	921882	160	373585	669	8297	03	3203	20
50	48025	21	875722	138	326916	648	8806	04	2696	10
60	52846	23	829584		280268		9316	05	2189	0

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S.M.

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M. S.	Sinus.	D.	Logarithm	Differ.	Different.	Diff.	Logar.	D	Sinus.	D.
0	10451846	12	829584	46116	180268	46625	549316	09	1189	06 60
10	57668	11	783468	094	233643	604	9825	09	1683	07 50
20	62489	12	737374	073	187039	583	550335	10	1176	08 40
30	67311	11	691301	052	140456	563	0845	11	0668	07 30
40	72132	12	645249	030	093893	541	1356	12	0161	07 20
50	76954	11	599219	009	047352	520	1867	13	9653	06 10
60	81775	12	553210	45988	000832	500	2378	14	9145	05 00
70	86597	11	507222	967	954332	478	2890	15	8636	04 50
80	91418	12	461255	945	907854	457	3401	16	8128	04 40
90	96239	11	415310	924	861397	435	3913	17	7619	04 30
100	1050161	12	369386	902	814962	414	4424	18	7110	04 20
110	05882	11	323484	881	768548	393	4936	19	6601	04 10
120	10703	12	277603	860	722155	373	5448	20	6091	04 00
130	15525	11	231743	839	675782	351	5961	21	5582	03 50
140	20346	12	185904	818	629431	331	6473	22	5072	03 40
150	25167	11	140086	797	583100	310	6986	23	4562	03 30
160	29988	12	094289	775	536790	289	7499	24	4051	03 20
170	34810	11	048514	754	490501	268	8013	25	3541	03 10
180	39631	12	002760	733	444333	247	8527	26	3030	03 00
190	44452	11	957017	712	397986	226	9041	27	2519	02 50
200	49273	12	911315	690	351760	205	9555	28	2007	02 40
210	54094	11	865625	669	305555	183	10070	29	1496	02 30
220	58915	12	819956	648	259372	163	0584	30	0984	02 20
230	63736	11	774308	627	213109	142	1099	31	0472	02 10
240	68557	12	728681	606	167067	122	1614	32	9960	02 00
250	73378	11	683075	585	120945	100	2130	33	9447	01 50
260	78199	12	637490	564	074845	080	2645	34	8934	01 40
270	83020	11	591926	543	028765	059	3161	35	8421	01 30
280	87841	12	546383	522	982706	039	3677	36	7908	01 20
290	92662	11	500861	501	936667	017	4194	37	7395	01 10
300	97483	12	455360	480	890650	45997	4710	38	6881	01 00
310	10602303	11	409880	459	844653	976	5227	39	6367	00 50
320	07124	12	364421	438	798677	956	5744	40	5853	00 40
330	11945	11	318883	417	752721	934	6262	41	5339	00 30
340	16766	12	273366	396	706787	914	6779	42	4824	00 20
350	21586	11	228170	376	660773	894	7297	43	4309	00 10
360	26407	12	182794	356	614579	874	7815	44	3794	00 00

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M. S.	Sinu.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinu.	D.
6 0	10626407	21	182794	45355	614979	45873	567815	18	3794	50
10	31228	20	137439	335	569106	854	8333	19	3279	50
20	36048	27	092104	314	523252	832	8852	18	2764	16
30	40869		046790	293	477420	812	9370		2248	30
40	45690	20	001497	272	431608	791	9889	19	1732	20
50	50510	21	956225	251	385817	771	570408	20	1216	10
7 0	55331	20	910974	230	340046	749	0928	19	0699	053
10	60151	21	865744	209	294297	729	1447	20	0182	50
20	64972	20	820535	188	248568	708	1967	21	9665	40
30	69792	21	775347	168	202860	689	2487	22	9148	30
40	74613	20	730179	147	157171	667	3008	20	8631	20
50	79433	21	685032	127	111504	648	3528	21	8113	10
8 0	84254	20	639905	107	065856	628	4049		7595	052
10	89074	21	594728	086	020228	608	4570	22	7077	50
20	93894	21	549712	066	974620	587	5092	23	6559	40
30	98715	480	504646	045	929033	567	5613	22	6040	30
40	10703553		459601	024	883466	546	6135		5521	20
50	08355		414577	004	837920	526	6657		5002	10
9 0	13175	21	369573	44983	792394	506	7179	23	4483	051
10	17996	20	324590	963	746888	485	7702	22	3964	50
20	22816		279627	942	701403	465	8224	23	3444	40
30	27636		234685	922	655938	445	8747		2924	30
40	32456		189763	901	610493	425	9270	24	2404	20
50	37276		144862	881	565068	405	9794		1883	10
10 0	42096		099981	861	519663	385	580318		1363	050
10	46916		055120	840	474278	364	0842		0842	50
20	51736		010280	820	428914	345	1366		0321	40
30	56556	21	965460	800	383569	324	1891	25	99799	21
40	61376	22	920660	780	338245	305	2415	25	94178	10
50	66196		875880	760	292940	285	2940		8756	10
11 0	71016		831120	739	247655	265	3465	26	8234	049
10	75836		786381	719	202390	244	3991	25	7711	50
20	80656		741662	699	157146	225	4516	26	7189	40
30	85476		696963	678	111921	204	5041		6666	30
40	90296		652285	658	066717	184	5568		6143	20
50	95116		607627	637	021533	164	6094	27	5620	10
60	99936		562990		1976369		6621	24	5096	048

Grad. 83.

S.M.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
12 0	1079936	19	562990	446.7	976369	45143	586621	26	5096	60
10	1080475	20	518373	597	931226	124	7147	23	4573	50
20	09575	19	473776	577	886103	104	7674	24	4049	40
30	14395	19	429199	557	840998	085	8201	28	3525	30
40	19214	20	384642	537	795913	065	8729	25	3000	20
50	24034	19	340105	517	750848	045	9257	23	2476	10
13 0	28854	19	295588	497	705803	025	9785	23	1951	047
10	33673	20	251051	477	660778	006	990313	19	1426	50
20	38493	19	206614	457	615772	44986	0842	15	0900	40
30	43313	20	162157	437	570786	966	1371	15	0375	30
40	48133	19	117720	417	525820	946	1900	16	9845	20
50	52952	20	073303	398	480874	927	2429	17	9323	10
14 0	57771	20	028905	378	435947	907	2958	17	8796	046
10	62591	19	984527	358	391040	888	3487	16	8270	50
20	67410	20	940169	338	346152	868	4017	17	7743	40
30	72229	20	895831	318	301284	845	4547	31	7216	30
40	77049	19	851513	298	256435	825	5078	30	6685	20
50	81868	20	807215	278	211606	809	5609	28	6162	10
15 0	86687	20	762937	258	166797	790	6140	32	5634	045
10	91507	19	718679	238	122007	764	6672	31	5106	50
20	96326	20	674441	218	077238	750	7203	31	4578	40
30	1090145	20	630123	198	032488	729	7735	31	4049	30
40	05965	19	586025	178	987759	710	8266	31	3521	20
50	10784	20	541847	158	943049	690	8798	29	2992	10
16 0	15603	20	497689	139	898359	672	9330	33	2463	044
10	20422	19	453550	119	853687	651	9863	32	1933	50
20	25241	20	409431	100	809036	633	600395	33	1404	40
30	30060	20	365331	080	764403	613	0928	33	0874	30
40	34879	19	321251	060	719790	593	1461	34	0344	20
50	39698	20	277291	040	675197	574	1994	34	9814	10
17 0	44517	20	233251	021	630623	554	2528	33	9283	043
10	49336	19	189130	001	586069	535	3061	34	8753	50
20	54155	20	145129	43982	541534	516	3595	35	8222	40
30	58974	20	101147	962	497018	497	4129	35	7691	30
40	63793	19	057185	943	452521	478	4664	36	7159	20
50	68612	20	013242	924	408043	460	5199	36	6627	10
60	73431	20	220969318		363583		5735		6096	042

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
18 0	10973431	48 0	969318	43504	363583	44439	605735	35	6096	33 60
10	78250	18	925414	885	319144	421	6270	35	5563	32 50
20	83069	19	881529	865	274723	421	6806	36	5031	31 40
30	87888	18	837664	845	230322	381	7342	37	4498	30 30
40	92706	19	793819	826	185941	363	7878	36	3966	29 20
50	97525	18	749993	807	141578	343	8415	36	3433	28 10
19 0	11002344	18	706186	787	097235	324	8951	37	2899	27 04
10	07162	19	662399	768	051911	305	9488	37	2366	26 50
20	11981	18	618631	748	008606	285	610025	38	1832	25 40
30	16800	18	574883	729	964321	267	0562	38	1298	24 30
40	21618	19	531154	710	920054	247	1100	37	0764	23 20
50	26437	18	487444	691	875807	229	1637	37	0230	22 10
20 0	31256	18	443753	671	831578	209	2175	38	9695	21 04
10	36074	19	400082	652	787369	191	2713	39	9160	20 50
20	40893	18	356430	633	743178	171	3252	38	8625	19 40
30	45711	18	312797	613	699007	152	3790	39	8089	18 30
40	50530	19	269184	594	654855	133	4329	40	7554	17 20
50	55348	18	225590	574	610722	114	4868	40	7018	16 10
21 0	60166	19	182016	555	566608	094	5408	39	6482	15 03
10	64985	18	138461	536	522514	076	5947	40	5945	14 50
20	69803	18	094925	518	478438	058	6487	41	5409	13 40
30	74621	19	051407	499	434380	040	7027	41	4872	12 30
40	79440	18	007908	480	390340	021	7568	42	4335	11 20
50	84258	19	964428	460	346319	001	8109	42	3798	10 10
22 0	89076	18	920968	441	302318	43983	8650	43	3260	09 03
10	93894	19	877527	422	258335	963	9192	41	2722	08 50
20	98723	18	834105	403	214372	945	9733	42	2184	07 40
30	11103531	18	790702	383	170427	924	620275	41	1646	06 30
40	08349	19	747319	365	126503	907	0816	42	1108	05 20
50	13167	18	703954	345	082596	887	1358	43	0569	04 10
23 0	17985	18	660609	326	038709	869	1900	43	0030	03 03
10	22803	19	617283	307	994840	849	2443	42	9491	02 50
20	27621	18	573976	288	950991	831	2985	43	8952	01 40
30	32439	18	530688	269	907160	812	3528	43	8412	00 30
40	37257	19	487419	251	863348	794	4071	44	7872	99 20
50	42075	18	444168	232	819554	776	4614	44	7332	98 10
60	46893	18	400936		775778		5158		6792	97 03

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M. S.	Sinus	D.	Logarithm	Differ.	Different	Differ.	Logar	D.	Sinus	D.
24 0	11146825	16	400956	43213	775778	43757	625158	16	6792	60
10	51711	16	357723	194	732021	738	5722	16	6151	50
20	56529	16	314529	174	68883	719	6246	16	5710	40
30	61347	16	271355	155	644564	699	6791	16	5169	30
40	66165	16	228200	137	600865	682	7335	16	4618	20
50	70983	16	185063	118	557183	663	7880	16	4087	10
25 0	75800	17	141945	100	513520	646	8425	17	3545	035
10	80618	17	098845	081	469874	626	8971	17	3003	50
20	85436	17	055764	061	426248	608	9510	17	2461	40
30	90253	17	012702	043	382640	589	63006	17	1919	30
40	95071	17	969659	024	339051	570	0608	17	1376	20
50	99889	17	926635	006	295481	553	1154	17	0833	10
26 0	11204706	18	883629	42987	251928	533	1701	18	0250	034
10	09523	18	840641	968	208395	515	2247	18	9747	50
20	14341	18	797674	945	164880	496	2794	18	9203	40
30	19159	18	754725	931	121384	479	3341	18	8655	30
40	23977	18	711794	912	077905	460	3885	18	8115	20
50	28794	18	668882	894	034445	442	4437	18	7571	10
27 0	33612	17	625988	875	991003	424	4985	19	7027	033
10	38429	17	583113	857	947579	405	5534	18	6482	50
20	43246	18	540256	838	904174	387	6082	19	5937	40
30	48064	17	497418	819	860287	368	6681	18	5392	30
40	52881	18	454599	801	817415	350	7180	18	4841	20
50	57699	17	411798	782	774069	331	7725	18	4301	10
28 0	62516	18	369016	763	730738	313	8278	19	3755	032
10	67333	18	326253	745	687425	294	8828	19	3205	50
20	72150	18	283508	726	644131	276	9377	19	2662	40
30	76968	18	240782	707	600855	257	9927	19	2116	30
40	81785	18	198075	689	557598	240	640477	19	1569	20
50	86602	17	155386	671	514358	222	1028	19	1021	10
29 0	91419	17	112715	653	471136	204	1579	19	0474	031
10	96236	17	070062	634	427932	186	2130	19	9927	50
20	101053	17	027428	616	384746	167	2682	19	9379	40
30	05870	17	984812	598	341579	150	3233	19	8831	30
40	10687	17	942214	579	298429	131	3785	19	8283	20
50	15504	17	899635	561	255298	113	4337	19	7734	10
60	20321	17	857074		212185		4889	19	7186	030

Grad. 83.

S.M.

Grad. 6.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
30 0	11320321	487	857074	2543	211185	43096	644889	53	7186	60
10	25138	117	814531	524	169089	076	5442	53	6637	50
20	29955	487	771007	506	126013	059	5994	52	6087	40
30	34772	17	729501	488	082954	041	6547	52	5538	30
40	39589	16	687013	470	039913	024	7100	54	4988	20
50	44406	17	644543	451	996889	005	7654	54	4438	10
31 0	49223	16	602092	433	953884	42987	8208	55	3888	029
10	54040	17	559659	414	910897	969	8762	55	3338	50
20	58856	17	517245	395	867928	949	9317	54	2788	40
30	63673	16	474850	377	824979	932	9871	55	2237	30
40	68490	17	432473	359	782047	914	650426	55	1686	20
50	73306	17	390114	341	739133	897	0981	56	1134	10
32 0	78123	16	347773	323	696236	878	1537	55	0583	028
10	82940	17	305450	305	653358	860	2092	56	0031	50
20	87756	17	263145	287	610498	843	2647	56	9479	40
30	92573	16	220858	269	567655	825	3203	57	8927	30
40	97390	17	178589	250	524830	806	3759	57	8374	20
50	1140206	17	136339	232	482024	788	4315	58	7822	10
33 0	07023	16	094107	214	439236	771	4871	57	7269	027
10	11839	17	051893	197	396465	754	5428	58	6716	50
20	16655	17	009696	178	353711	735	5985	58	6162	40
30	21472	16	85518	161	310976	719	6542	58	5609	30
40	26288	17	925357	143	268257	700	7100	57	5055	20
50	31105	16	883214	125	225557	683	7657	58	4501	10
34 0	35921	17	841089	108	182874	666	8215	59	3947	026
10	40737	16	798981	090	140208	648	8773	59	3392	50
20	45554	17	756821	072	097560	631	9331	60	2837	40
30	50370	16	714819	053	054929	612	9890	60	2282	30
40	55186	17	672766	035	012317	594	660449	61	1727	20
50	60002	17	630731	016	969723	576	1008	61	1171	10
35 0	64819	16	588715	998	927147	557	1568	59	0616	025
10	69635	17	546717	981	884590	541	2127	60	0060	50
20	74451	16	504736	964	842049	524	2687	60	9504	40
30	79267	17	462772	948	799515	509	3247	61	8947	30
40	84083	16	420824	930	757016	490	3808	61	8391	20
50	88899	17	378894	912	714526	473	4368	61	7834	10
60	93715	16	336982		672053		4929		7277	024

Grad. 83.

S. M.

Grad. 6.

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M. S.	Sinus.	D	Logarith	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
36 °	11493715	4816	336982	1893	671053	4254	664929	5013	7277	60
10	98531		295089	875	629599	436	5490	5013	6719	50
20	11503347		253214	856	587163	417	6051	5013	6161	40
30	08163		211318	839	544746	401	6612	62	5604	30
40	12979		169519	822	502345	384	7174	62	5046	20
50	17795		127697	804	459961	367	7736	63	4487	10
37 °	22611	15	085893	786	417594	349	8299	63	3929	59
10	27426	16	044107	768	375145	330	8862	62	3370	50
20	32242		002339	750	332915	313	9414	63	2811	40
30	37058		960589	733	290602	296	9987	63	2252	30
40	41874	15	918856	716	248306	280	670550	64	1693	20
50	46689	16	877140	698	206026	263	1114	64	1133	10
38 °	51505		835442	680	163764	244	1678		0573	022
10	56321	15	793762	662	121520	226	2242		0013	50
20	61136	16	752100	645	079594	210	2806	65	9452	61
30	65952		710455	627	037084	191	3371	64	8892	60
40	70768	15	668828	609	994893	174	3935	65	8331	50
50	75583	16	627219	592	952719	157	4500	65	7770	40
39 °	80399	25	585627	575	910562	141	5065	66	7209	62
10	85214	16	544052	557	868421	122	5631	65	6647	50
20	90030	15	502495	540	826299	106	6196	66	6085	40
30	94845	16	460955	523	784193	089	6762		5523	30
40	99661	15	419432	505	742104	071	7328		4961	20
50	11604476		37792	487	700033	054	7894	67	4399	10
40 °	09291	16	336440	470	657979	037	8461		3836	020
10	14107	15	294970	452	615942	019	9028		3273	50
20	18922		253518	434	573923	001	9595		2710	40
30	23737	16	212084	417	531912	41985	680162	68	2146	63
40	28553	15	170667	400	489937	967	0730	67	1583	64
50	33368		129267	383	447970	951	1297	68	1019	10
41 °	38183		087884	365	406015	933	1865		0455	65
10	42998		046519	348	364086	917	2433	69	9890	64
20	47813	16	005171	331	322169	899	3002	68	9326	65
30	52629	15	963840	313	280270	882	3570	69	8761	30
40	57444		922527	299	238388	864	4139		8196	20
50	62259		881232	278	196524	847	4708		7630	10
60	67074		839954		154677		5277		7065	018

Grad. 83.

S.M.

Grad. 6.

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M. S.	Sinus.	D.	Logarith.	Differ.	Different.	Differ.	Logar.	D.	Sinus.	D.
42 0	11667074	4815	839954	1260	154677	1829	685277	69	7065	60
10	71889	14	798694	243	112848	813	5846	70	6499	50
20	76704	15	757451	287	071035	797	6416	71	5933	40
30	81519	14	716224	210	029238	781	6986	72	5367	30
40	86334	15	675014	193	987457	763	7557	73	4801	20
50	91149	14	633821	175	945694	746	8127	74	4234	10
43 0	95963	15	592646	158	903948	729	8698	75	3667	017
10	11700778	14	551488	141	862219	713	9269	76	3100	68
20	05593	15	510347	124	820506	695	9841	77	2532	60
30	10408	14	469223	107	778811	679	09412	78	1965	60
40	15223	15	428116	090	737132	662	0984	79	1397	30
50	20037	14	387026	072	695470	645	1556	80	0829	20
44 0	24852	15	345954	055	653825	627	2129	81	0261	10
10	29667	14	304899	038	612198	611	2701	82	9692	69
20	34481	15	263861	021	570587	595	3274	83	9123	60
30	39296	14	222839	005	528992	579	3847	84	8554	30
40	44111	15	181834	0989	487413	562	4421	85	7985	20
50	48925	14	140845	972	445851	546	4994	86	7415	10
45 0	53740	15	099873	955	404305	529	5568	87	6846	69
10	58554	14	058918	938	362776	512	6142	88	6276	70
20	63369	15	017980	921	321264	496	6716	89	5706	60
30	68183	14	977059	903	279768	477	7291	90	5135	30
40	72998	15	936156	885	238291	460	7865	91	4564	20
50	77812	14	895271	868	196831	443	8440	92	3993	10
46 0	82626	15	854403	851	155388	427	9015	93	3422	014
10	87441	14	813552	834	113961	409	9591	94	2851	60
20	92255	15	772718	817	072552	393	700166	95	2280	50
30	97069	14	731901	800	031159	376	0742	96	1708	40
40	101884	15	691101	783	989783	359	1318	97	1136	30
50	06698	14	650318	767	948424	344	1894	98	0563	20
47 0	11512	15	609551	750	907080	326	2471	99	9991	10
10	16326	14	568801	733	865754	310	3047	00	9418	73
20	21140	15	528068	716	824444	293	3624	01	8845	60
30	25955	14	487352	699	783151	277	4201	02	8272	50
40	30769	15	446653	683	741874	261	4779	03	7698	40
50	35583	14	405970	666	700613	244	5357	04	7125	30
60	40397	15	365304		659369		5935	05	6551	20

Grad. 83.

S.M.

Grad. 6.

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M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Diff.	Logar.	D.	Sinus.	D.
48 °	11840397	414	365304	40649	659369	41217	705935	78	6551	60
10	45211	213	324655	633	618442	212	6513	79	5977	50
20	50025	214	284022	616	576930	194	7092	78	5402	40
30	54839		243406	600	535736	179	7670		4828	30
40	59653		202806	583	494557	162	8249		4253	20
50	64467		162223	565	453395	145	8828		3678	10
49 °	69281	13	121658	548	412250	127	9408	80	3102	011
10	74094	14	081110	531	371123	111	9987	79	2527	50
20	78908		040579	515	330012	095	710567	80	1951	40
30	83722		000064	499	288917	080	1147	81	1375	30
40	88536	212	959565	482	247837	062	1728	80	0799	20
50	93350	13	919083	466	206775	047	2308	81	0222	10
50 °	98163	14	878617	450	165728	031	2889		9646	010
10	11902977		838167	433	124697	015	3470	82	9069	50
20	07791	13	797734	416	083682	40997	4052	81	8491	40
30	12604	14	757318	399	042685		4633	82	7914	30
40	17418	13	716919	383	001704	981	5215		7336	20
50	22231	14	676536	367	960739	965	5797	83	6758	10
51 °	27045	13	636169	351	919790	949	6379	83	6180	09
10	31858	14	595818	334	878856	934	6968	82	5602	50
20	36672	13	555484	317	837940	916	7544	83	5023	40
30	41485	14	515167	300	797040	883	8127		4444	30
40	46299	13	474867	284	756157	868	8710	84	3865	20
50	51112	14	434583	267	715280	851	9294		3286	10
52 °	55926	13	394316	251	674438	835	9878	85	2707	08
10	60739	14	354065	235	633603	820	720462	84	2127	50
20	65552	13	313830	218	592785	802	1047	85	1547	40
30	70366	14	273612	202	551981	787	1631	85	0967	30
40	75179	13	233410	186	511194	771	2216		0386	20
50	79992	14	193224	170	470423	755	2801	86	9806	10
53 °	84805	13	153054	153	429668	738	3386	87	9225	07
10	89618	14	112961	136	388930	722	3971	86	8643	50
20	94432	13	072765	119	348208	704	4557	85	8062	40
30	99245	14	032646	103	307504	689	5142	86	7480	30
40	11004058	13	992543	087	266815	673	5728		6899	20
50	08871	14	952456	071	226142	658	6314	87	6317	10
60	13684	111	912385		185484		6901		5734	06

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S.M

M.S.	Sinus.	D.	Logarith.	Differ.	Different.	Diff.	Logar	D	Sinus.	D		
54 0	12013684	4813	9121385	40054	111	185484	40641	726901	587	9217	5734	60
10	18497		872331	038	111	144843	625	7488		5151	5151	83
20	23310		832293	022	110	104218	609	8075		4569	4569	82
30	28123		792271	006	110	063609	594	8662	38	3986	3986	30
40	32936		752265	39989	110	023015	576	9250	87	3403	3403	20
50	37749		712276	973	110	982439	561	9837	88	2819	2819	10
55 0	42561	12	672303	957	110	941878	546	730425	89	2235	2235	0.5
10	47374	13	632346	941	110	901332	529	1014	88	1651	1651	50
20	52187		592405	925	110	860803	514	11602	89	1067	1067	40
30	57000		552480	909	110	820289	498	2191		0483	0483	85
40	61813	12	512571	892	110	779791	481	2780		9888	9888	20
50	66625	13	472679	876	110	739310	466	3369	90	9313	9313	10
56 0	71438	13	432203	860	110	698844	449	3959	89	8728	8728	0.4
10	76251	12	392943	844	110	658395	434	4548	90	8143	8143	86
20	80063	13	353099	829	110	617961	419	5138		7557	7557	40
30	85875		313270	813	110	577542	404	5728	91	6971	6971	30
40	90688	11	273457	796	110	537138	387	6319		6385	6385	10
50	95501	13	233661	780	110	496751	371	6910	91	5799	5799	10
57 0	100314	12	193881	764	110	456380	355	7501		5212	5212	87
10	05126	13	154117	748	110	416025	340	8092	92	4626	4626	86
20	09939	13	114369	732	110	375685	323	8684	91	4039	4039	87
30	14751	13	074637	716	110	335362	308	9275	92	3452	3452	88
40	19564	12	034921	700	110	295054	292	9867		2864	2864	20
50	24376	11	995221	684	110	254762	276	740459		2276	2276	10
58 0	29188	13	955537	668	110	214486	261	1051	93	1688	1688	0.2
10	34001	12	915869	651	110	174225	243	1644	92	1100	1100	50
20	38813		876218	636	110	133982	229	2236	93	0512	0512	89
30	43625		836582	620	110	093753	213	2829		9923	9923	30
40	48437	13	796962	604	110	053540	198	3422	94	9334	9334	20
50	53250	12	757358	588	110	013342	182	4016		8745	8745	10
59 0	58062		717770	572	110	973160	166	4610		8156	8156	0.1
10	62874		678198	556	110	932994	151	5204	95	7566	7566	89
20	67686		638642	540	110	892843	134	5799	94	6977	6977	80
30	72498		599102	524	110	852709	119	6393	95	6387	6387	90
40	77310		559578	508	110	812590	102	6988	94	5796	5796	30
50	82122		520070	493	110	772488	88	7582	95	5206	5206	90
60	86934		480577		110	732400		8177		4615	4615	91

Grad. 7.

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M.S.	Sinas.	D.	Logarith.	Diff.	Different.	Diff.	Logar.	D.	Sinas.	D.
0	12184934	4812	480577	77	732400	73	741177	90	4615	60
10	91746		441100	61	692327	56	8773	90	40:4	50
20	96518		401639	45	651271	41	9368	95	3438	40
30	12191370		362194	30	612130	26	9964	90	2842	30
40	106182		322764	14	572104	10	750560	90	2250	20
50	10994		283350	99	532194	96	1156	97	1658	10
60	15806		243951	82	492198	79	1753		1066	059
70	20628		204569	66	452219	63	2350		0474	50
80	25429		165203	51	412256	48	2947		9881	40
90	30241		125852	35	372308	32	3544		9288	30
100	35053		086517	20	332371	18	4141		8695	20
110	39865		047197	04	292453	07	4738		8102	10
120	44676		007893	88	252556	85	5335		7508	94
130	49488		968604	74	212665	73	5935		6915	84
140	54300		929330	55	172796	58	6534		6321	74
150	59111		890071	41	132931	45	7133		5726	64
160	63923		850821	27	093091	26	7732		5132	54
170	68734		811601	11	053222	10	8331		4537	44
180	73546		772390	97	013460	89	8930		3942	34
190	78357		733190	77	973644	71	953		3347	24
200	83169		694015	61	933828	65	160130		2752	14
210	87980		654855	46	894127	49	0730		2156	04
220	92791		615715	31	854329	33	1330		1560	94
230	97603		576581	14	814630	18	1931		0964	84
240	102414		537467	99	774933	00	2532		0368	74
250	107225		498358	84	735233	86	3133		9771	64
260	112037		459254	69	695541	71	3735		9174	54
270	116848		420155	55	655878	55	4337		8577	44
280	121659		381160	40	616221	41	4938		7980	34
290	126470		342120	25	576571	27	5541		7383	24
300	131281		303095	10	536931	13	6145		6785	14
310	136093		264081	94	497333	99	6746		6187	04
320	140904		225081	77	457742	80	7349		5589	94
330	145715		186114	61	418162	64	7952		4990	84
340	150526		147153	45	378598	48	8555		4392	74
350	155337		108208	29	339090	33	9158		3793	64
360	160148		069279		299517		9761		3194	54

Grad. 82.

K

S.M.

Grad. 7.

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L. S.	Sinus.	D.	Logarith.	Diff.	Different.	Diff.	Logar.	D.	Sinus.	D.
6 0	12360148	11	069279	15	2095517	19	769762	604	9913	60
10	64959	10	030364	86	259998	19	770366	05	1594	50
20	69770	10	991463	86	220493	19	0970	05	1995	40
30	74580	10	952577	69	181003	74	1574	05	1395	30
40	79391	10	913708	54	141529	59	2179	05	0795	20
50	84202	10	874854	40	102070	45	2784	05	0195	10
7 0	89013	10	836014	24	062625	30	3389	06	9594	03
10	93824	10	797190	09	023195	14	3995	05	8993	50
20	98634	10	758381	93	983781	99	4600	06	8392	40
30	10403445	10	719588	77	944382	83	5206	07	7791	30
40	08256	10	680811	61	904999	67	5812	07	7190	20
50	13066	10	642050	46	865632	53	6418	07	6588	10
8 0	17877	10	603304	31	826279	38	7025	08	5986	03
10	22688	10	564573	16	786941	23	7632	08	5384	50
20	27498	10	525857	01	747618	09	8239	08	4782	40
30	32309	10	487156	86	708309	93	8847	07	4179	30
40	37119	10	448470	71	669016	79	9454	08	3576	20
50	41930	10	409799	56	629737	64	780062	08	2973	10
9 0	46740	10	371143	40	590473	48	0670	09	2370	03
10	51551	10	332503	25	551225	34	1278	09	1766	50
20	56361	10	293878	10	511991	18	1887	08	1162	40
30	61171	10	255268	96	472773	05	2495	09	0558	30
40	65982	10	216672	81	433568	90	3104	10	9954	20
50	70792	10	178091	66	394378	76	3713	10	9350	10
0 0	75602	10	139525	50	355202	59	4323	09	8745	03
10	80413	10	100975	35	316043	45	4932	10	8140	50
20	85223	10	062440	20	276898	30	5542	11	7535	40
30	90033	10	023920	04	237768	15	6152	11	6929	30
40	94843	10	985416	89	198653	00	6763	12	6324	20
50	99653	10	946927	74	159553	85	7374	12	5718	10
1 0	10504463	10	908453	59	120468	70	7985	12	5112	03
10	05273	10	869994	44	081398	56	8596	13	4505	50
20	14083	10	831550	29	042342	40	9208	13	3899	40
30	18893	10	793121	14	003302	26	9819	12	3292	30
40	23703	10	754707	99	964276	11	790431	12	2685	20
50	28513	10	716308	85	925265	97	1043	12	2078	10
60	33323	10	677923	70	886268	82	1655	12	1470	03

Grad. 82.

J. M.

Grad. 7.

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M.S.	Sinus.	D.	Logarith.	Diff.	Different.	Diff.	Logar.	D	Sinna.	D.
12 0	13533383	410	677923	71	886268	382	791655	13	9211470	608
10	38133	107	639552	56	847284	68	8268	12	9210862	50
20	42943	10	691196	41	808316	54	2880	13	9210254	40
30	47752	09	562855	26	769362	39	3493	14	92109646	30
40	52563	09	524529	11	730413	25	4106	15	92109038	20
50	57373	09	486218	96	691498	10	4710	16	92108429	10
13 0	62182	10	447922	79	652588	93	5314	17	92107820	047
10	66992	09	409643	64	613695	79	5948	18	92107211	50
20	71802	09	371379	49	574816	63	6563	19	92106602	40
30	76611	10	333130	34	535953	49	7177	20	92105993	30
40	81421	09	294896	19	497104	34	7792	21	92105384	20
50	86231	09	256677	04	458270	19	8407	22	92104772	10
14 0	91040	10	218473	90	419451	06	9022	23	92104161	046
10	95850	09	180283	76	380645	91	9638	24	92103551	50
20	12600659	10	142107	61	341854	77	800353	25	92102940	40
30	05469	09	103946	46	303077	62	0869	26	92102329	30
40	10278	10	065800	31	264315	47	1485	27	92101718	20
50	15088	09	027669	17	225568	34	2101	28	92101107	10
15 0	19897	10	989532	02	186834	19	2718	29	92100495	045
10	24716	09	951450	88	148115	05	3335	30	92100883	50
20	29516	09	913162	73	109410	91	3952	31	92100271	40
30	34325	10	875189	58	070719	75	4570	32	92100658	30
40	39134	09	837231	43	032044	61	5187	33	92100046	20
50	43943	10	799188	29	993383	47	5805	34	92100433	10
16 0	48753	09	761159	14	954736	33	6423	35	92100820	044
10	53562	10	723145	00	916103	18	7042	36	92100206	50
20	58371	09	685145	85	877485	04	7660	37	92100593	40
30	63180	10	647160	69	838881	88	8279	38	92100979	30
40	67989	09	609191	55	800293	74	8898	39	92101365	20
50	72798	10	571236	41	761719	61	9517	40	92101751	10
17 0	77607	09	533295	26	723158	45	810237	41	92102137	043
10	82416	10	495369	11	684613	31	0756	42	92102521	50
20	87225	09	457458	96	646082	16	1376	43	92102906	40
30	92034	10	419562	82	607566	03	1996	44	92103291	30
40	96843	09	381680	67	569063	88	2617	45	92103676	20
50	12701652	10	343813	53	530575	74	3238	46	92104060	10
60	06461	09	305960	38	492101	59	3859	47	92104444	042

Grad. 82.

S.M.

Grad. 7.

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M. S.	Sinus.	D.	Logarith.	Di ff	Different.	Diff	Logar	Sinus.	D.
18 0	1206461	09	305960	38	499101	184	81855	944	0
10	11270	08	216812	14	453642	40	4480	828	50
20	16078	07	230158	09	415190	30	510	821	0
30	20887	06	192489	37	376766	17	5723	7895	30
40	25646	05	154694	95	338349	02	6345	6978	10
50	30505	04	116914	66	299947	88	6967	6361	10
19 0	35313	03	079147	51	261559	74	7589	5744	04
10	40122	02	041397	37	223185	59	8212	5126	50
20	44931	01	001060	21	184826	45	8834	4509	17
30	49731	00	965933	09	146481	31	9457	3891	30
40	54548	98	928230	93	108150	17	10080	3271	19
50	59356	09	890537	79	069833	03	0704	2654	10
20 0	64165	08	852858	64	031530	88	1318	2035	04
10	68973	07	815194	50	993242	75	1452	1416	50
20	73782	06	777544	36	954967	60	2577	0797	10
30	78590	05	739508	22	916707	47	3201	0158	30
40	83398	04	702481	08	878466	33	3826	9558	10
50	88207	03	664678	93	840227	18	4451	893	10
21 0	93015	02	627085	77	802010	03	5076	8315	04
10	97823	01	589508	63	763805	88	5702	7697	50
20	12802632	08	551945	49	725418	73	6321	7077	10
30	07440	07	514396	35	687443	61	6955	645	30
40	12148	06	476861	21	649282	48	759	58	10
50	17056	05	439340	08	611334	35	820	524	0
22 0	21864	04	401832	94	572999	21	8851	4852	50
10	26672	03	364338	79	534878	06	9470	3971	10
20	31481	02	326852	64	49677	92	1007	318	0
30	36289	01	289345	49	458680	76	0715	252	50
40	41097	00	251174	34	420604	61	124	110	10
50	45905	99	214512	20	382542	48	1970	145	0
23 0	50713	98	177092	06	344394	35	2598	081	50
10	55520	97	139682	92	306451	20	3227	023	10
20	60328	96	102294	78	268439	07	3855	988	0
30	65136	95	064916	64	230432	93	4484	888	50
40	69944	94	027552	50	192439	79	5113	8363	10
50	74752	93	990202	37	154440	67	5742	7741	0
60	79560	92	952865	24	116493	53	6372	7116	50

Grad. 82.

Grad. 7.

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M. S.	Sinus	D.	Logarith.	Diff.	Different.	Diff.	Logar.	D.	Sinus	D.
24 0	11179560	07	9521861	32	108493	32	838372	06	7116	60
10	84367	07	915543	32	1078441	32	17001	06	6492	24
20	89179	08	878126	32	1040605	32	27631	06	5867	40
30	93083	07	840743	32	1002682	32	38261	06	5241	30
40	96790	08	803664	32	964772	32	48992	06	4617	20
50	1003598	08	766399	32	926876	32	59723	06	3991	10
25 0	108406	07	729148	32	888994	32	70454	06	3366	16
10	13213	08	691911	32	851126	32	81185	06	2740	16
20	13021	07	654688	32	813171	32	91916	06	2113	40
30	12288	07	617420	32	775432	32	10248	06	1487	30
40	17636	08	580286	32	737606	32	20680	06	8240	30
50	14443	08	543106	32	699794	32	31312	06	0433	10
26 0	17251	07	505940	32	661993	32	41943	06	9606	034
10	4248	08	468758	32	624111	32	52572	06	8779	50
20	46865	08	431650	32	586440	32	63210	06	7852	18
30	51673	07	394526	32	548683	32	73843	06	6924	30
40	56414	08	357416	32	510938	32	84477	06	6096	29
50	61187	08	320318	32	473203	32	95110	06	5267	28
27 0	66094	07	283135	32	435493	32	105744	06	4439	29
10	70903	08	246166	32	397788	32	21378	06	3590	50
20	75707	07	209112	32	360106	32	32112	06	2751	40
30	80516	07	172074	32	322426	32	42846	06	1912	30
40	85324	08	135048	32	284765	32	53581	06	1083	20
50	90130	08	998034	32	247118	32	64316	06	0253	10
28 0	94935	07	961035	32	209483	32	75052	06	9403	032
10	99744	08	924051	32	171864	32	85787	06	8543	50
20	100455	07	887081	32	134259	32	96522	06	7683	40
30	10915	07	850124	32	996665	32	107259	06	6823	30
40	14165	08	813181	32	959085	32	214096	06	5961	20
50	18093	08	876253	32	921520	32	321733	06	5090	10
29 0	21779	07	839337	32	883966	32	42869	06	4229	031
10	26581	08	802426	32	846430	32	536006	06	3367	10
20	31393	07	765519	32	808906	32	643643	06	2506	40
30	36199	07	728625	32	871394	32	751281	06	1638	30
40	40906	08	691813	32	833897	32	858918	06	0751	20
50	45713	07	654960	32	796413	32	966556	06	9800	10
60	50519	07	618137	32	758943	32	107294	06	8886	030

Grad. 82.

S.M.

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Grad. 7.

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M. S.	Sinus.	D.	Logarith.	Diff.	Differens.	Diff.	Logarith.	D. Sinus.	1
42 0	13398619	04	9001854	358	51	100	995770	9000	8310
10	13401423		9660003	38	100	059578	6425	55	7607
20	08227	05	930165	35	100	013084	7981	56	1020
30	13932	04	894340	12	199	986608	7237	57	6370
40	17836		858528	98	199	950134	8344	58	5710
50	22640	05	812735	85	199	918680	9050	59	5069
43 0	27445	04	786945	72	199	877238	9797	60	4418
10	32249		751173	59	199	840809	94364	61	3762
20	37053	05	715414	46	199	804392	1021	62	3116
30	41857		679668	34	199	762989	1679	63	2464
40	46661	04	643934	21	199	734592	2337	64	1813
50	51465	05	608213	08	199	695218	2995	65	1160
44 0	56269		572505	95	199	658852	3653	66	0508
10	61073		536810	82	199	622498	4312	67	9850
20	65877	04	501128	69	199	586158	4970	68	9203
30	70681	05	465455	56	199	549830	5629	69	8555
40	75485		429804	43	199	513516	6288	70	7897
50	80289	04	394162	30	199	477215	6947	71	7243
45 0	85093		358535	17	199	440926	7607	72	6590
10	89897	05	322911	04	199	404649	8267	73	5933
20	94701		287311	91	199	368385	8927	74	5282
30	99504	04	251731	78	199	332133	9588	75	4625
40	13504308		216143	65	199	295895	92048	76	3973
50	09112	05	180578	52	199	259669	0909	77	3318
46 0	13916		145025	40	199	223455	1570	78	2663
10	18719	04	109485	27	199	187253	2232	79	2008
20	23523	05	073938	14	199	151065	2893	80	1352
30	28326		038444	01	199	114885	3555	81	0696
40	33130	04	002943	88	199	078726	4217	82	0040
50	37933	05	967455	76	199	042596	4879	83	0384
47 0	42737		931979	63	199	006437	5542	84	8722
10	47540	04	895516	50	199	970312	6204	85	8071
20	52344	05	861066	37	199	934199	6867	86	7419
30	57147		825629	24	199	898099	7530	87	6757
40	61951	04	790205	11	199	862011	8194	88	6100
50	66754	05	754794	99	199	825936	8858	89	5447
60	71557		719395	86	199	789872	9523	90	4784

Grad. 82.

Grad. 7.

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M.S.	Sin u.	D.	Logarith.	Diff.	Different.	Diff.	Logar.	D.	Sin u.	D.
48 0	13373557	03	719395	84	789873	360	929523	64	4784	60
10	76360	03	684011	72	753824	37	930187	65	4116	58
20	31164	04	648639	60	717787	24	0853	65	3468	40
30	85967	4803	613279	48	681763	13	1516	64	2809	30
40	90770	03	577931	36	645750	01	2121	66	2250	20
50	95573	03	542595	33	609749	89	2846	66	1491	10
49 0	13600376	03	507272	11	593760	77	3512	65	0832	01
10	05179	03	471961	98	557783	63	4178	65	0173	50
20	09982	03	436663	84	501810	50	4843	66	9513	40
30	14785	03	401379	71	465870	37	5509	67	8853	30
40	19588	03	366108	59	429933	26	6175	67	8193	20
50	24391	03	330849	46	394007	13	6842	67	7532	10
50 0	29294	03	295603	33	358094	00	7509	68	6872	00
10	33997	03	260370	21	322194	89	8176	68	6211	50
20	38800	03	225149	08	286305	75	8844	67	5550	40
30	43603	02	189941	95	250430	63	9511	68	4888	30
40	48406	02	154746	82	214567	50	940179	68	4227	20
50	53208	03	119564	69	178717	37	0847	68	3561	10
51 0	58011	02	084395	57	142820	26	1515	69	2903	00
10	62814	02	049238	45	107054	13	2184	68	2241	50
20	67616	03	014093	32	071241	01	2852	69	1578	40
30	72419	03	978961	20	035440	89	3521	70	0915	30
40	77221	02	943841	07	999651	77	4190	70	0252	20
50	82024	03	908734	95	963874	65	4860	70	9589	10
52 0	86817	02	873639	83	928109	53	5530	71	8926	00
10	91629	03	838556	71	892356	42	6200	71	8262	50
20	96432	01	803485	59	856614	29	6871	70	7598	40
30	1370134	03	768426	46	820885	17	7541	71	6934	30
40	06037	02	733380	34	785168	05	8212	71	6270	20
50	10839	03	698346	21	749463	92	8883	72	5605	10
53 0	15641	03	663325	08	713771	80	9554	72	4940	00
10	20444	02	628317	95	678091	66	950226	71	4275	50
20	25246	03	593322	82	642425	54	0897	72	3610	40
30	30048	03	558340	69	606771	41	1569	72	2944	30
40	34850	03	513371	56	571130	28	2241	73	2279	20
50	39652	03	488415	43	535502	16	2913	73	1613	10
60	44455	03	453472		499386		3586		0946	00

Grad. 82.

S.M.

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Grad. 7.

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M. S.	Sin. us.	D. Logarith.	D. Different.	D. Logarith.	D. Sinus.	D.
54 0	13744455	402	198	356355	673	66
10	49257	198	197	04	905	60
20	54059	383622	349	91	904	50
30	58861	348715	19	81	9613	40
40	63663	313820	07	68	8946	30
50	68465	278937	95	57	8279	20
			83	44	7612	10
55 0	73267	244067	70	32	6944	68
10	78069	209209	58	21	6276	0 5
20	82871	174363	46	07	5608	40
30	87672	139530	33	96	4940	30
40	92474	104709	21	83	4271	20
50	97276	069901	08	72	3602	10
56 0	13802078	035105	96	59	2933	0 4
10	06880	000321	84	47	2264	50
20	11681	965550	71	35	1595	40
30	16483	930791	59	24	0925	30
40	21284	896044	47	11	0255	20
50	26086	861310	34	99	9585	10
57 0	30888	826588	21	87	8914	71
10	35689	791878	10	76	8244	70 0 3
20	40491	757180	98	62	7573	71
30	45292	722495	85	51	6902	72 30
40	50094	687822	73	39	6230	71 20
50	54895	653161	61	28	5559	71 10
58 0	59696	618512	49	15	4887	72 0 2
10	64498	583875	37	03	4215	78
20	69299	549251	24	91	3541	79
30	74100	514639	12	79	2870	80
40	78901	480040	99	65	2197	75
50	83703	445454	86	54	1524	80
59 0	88504	410880	74	42	0851	81
10	93305	376318	62	31	0178	80
20	98106	341768	50	18	9504	81
30	13902907	307230	38	07	8830	81
40	07708	272704	26	96	8156	75
50	12505	238189	15	84	7481	74
60	17310	203686	03		6807	74

Grad. 82.

S. M.

Grad. 8.

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M.S.	Sinus.	D.	Logarith	D.	Different.	D.	Logar	D.	Sinus.	D.
0 0	13917310	4801	203686	91	225726	73	927960	82	6807	60
10	22111		169195	78	190553	59	8642	682	6132	50
20	26912		134719	66	155394	48	9323		5457	40
30	31713		100251	53	120246	35	980005		4782	30
40	36514		065798	40	085111	21	0687		4106	20
50	41314	00	031358	28	049989	11	1369	33	3430	10
1 0	46115	01	996930	17	014878	00	2051		2754	059
10	50916		962513	05	979778	88	2735		2078	50
20	55717	00	928108	93	944690	77	3418	34	1401	40
30	60517	01	893715	82	909613	65	4102	83	0725	30
40	65318		859333	69	874548	53	4785	84	0048	20
50	70119	00	824964	58	832495	42	5465		9371	10
2 0	74919	01	790606	46	804453	31	6155	85	8693	058
10	79720		756260	34	769412	18	6838	84	8016	50
20	84520	01	721926	22	734404	07	7522	85	7338	40
30	89321	00	687604	10	699397	95	8207		6666	30
40	94121	01	653294	98	664402	83	8892		5981	20
50	98922	00	618996	87	629419	73	9577	86	5303	10
3 0	14003722		584709	74	594449	59	990263	85	4624	057
10	08522	01	550435	62	559487	48	0948	86	3945	50
20	13323	00	516173	50	524539	36	1634		3266	40
30	18123		481923	38	489603	25	2320	87	2586	30
40	22923		447685	25	454678	12	3007		1906	20
50	27723	01	413460	13	415766	00	3694		1227	10
4 0	32524	00	379247	01	384866	89	4381	88	0546	056
10	37324		345046	90	349977	77	5069	87	9866	50
20	42124		310856	78	315100	66	5756	86	9185	40
30	46924		276678	66	280134	53	6442	87	8504	30
40	51724		242512	54	245381	42	7131	88	7823	20
50	56524		208358	43	210539	32	7819	89	7142	10
5 0	61324		174215	31	175707	19	8508	88	6460	055
10	66124		140084	19	140888	08	9196	85	5778	50
20	70924		105965	07	106080	96	9885		5096	40
30	75724		071858	95	071284	85	0574	90	4414	30
40	80524	4799	037763	83	036499	73	1264		3732	20
50	85323		003680	70	001726	60	1954		3049	10
60	90122	195	969610	194	966566		2644		2366	054

Grad. 81.

S.M

Grad. 8.

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M. S.	S: n nr.	D. Logarith.	Diff.	Different.	Diff.	Logar. D	Sinus.	D.
6	0	14090123	195	969610	194	-2644	2366	60
	10	94923	4800	935552	48	3334	1683	83
	20	99723	4800	901506	37	4025	0999	60
	30	14104523	4799	867472	24	4715	0315	30
	40	09322	4799	833450	13	5406	9631	20
	50	24122	4799	799439	02	6097	8947	10
7	0	18921	00	765440	194	6788	8263	85
	10	23721	00	731453	79	7480	7578	50
	20	28520	00	697477	67	8171	6891	40
	30	33320	99	663513	56	8863	6208	30
	40	38119	00	629561	44	9555	5523	20
	50	42919	99	595621	33	0248	4838	10
8	0	47718	00	561693	22	0941	4151	05
	10	52517	00	527777	09	1634	3466	87
	20	57317	99	493872	99	2328	2779	86
	30	62116	99	459978	87	3021	2093	87
	40	66915	00	426096	76	3715	1406	10
	50	71714	00	392225	65	4409	0719	10
9	0	76514	4799	358366	53	5103	0032	05
	10	81313	4799	324519	42	5798	9345	50
	20	86112	4799	290683	30	6492	8657	88
	30	90911	4799	256859	19	7187	7969	30
	40	95710	4799	223047	07	7882	7281	20
	50	14200509	4799	189247	95	8577	6593	10
10	0	05308	4799	155458	85	9273	5904	05
	10	10107	4799	121680	73	9968	5215	50
	20	14906	4799	087914	62	0664	4526	40
	30	19705	4799	054160	50	1360	3837	30
	40	24504	4799	020418	39	2057	3148	20
	50	29303	4799	986687	28	2754	2458	10
11	0	34101	99	952968	17	3452	1768	04
	10	38900	99	919260	05	4149	1078	50
	20	43699	99	885564	94	4847	0387	40
	30	48498	98	851879	82	5544	9696	30
	40	53296	99	818206	71	6242	9005	20
	50	58095	98	784545	59	6940	8314	10
	60	62893	98	750896	48	7639	7623	04

Grad. 81.

S.M.

Grad. 8.

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M.S.	Sinus.	D.	Logarith	D.	Different.	D.	Logar.	D.	Sinus.	D.
12 0	14261893	99	750896	38	723157	38	7639	98	7633	60
10	67691	98	717258	27	688921	26	8337	99	6931	50
20	73490	99	683631	15	654595	14	9036	99	6240	40
30	77189	98	650016	03	620281	03	9735	700	5548	30
40	82087	99	616413	91	585978	91	0435	100	4855	20
50	86886	98	582812	79	551687	79	1135	01	4163	10
13 0	91684	98	549243	68	517408	68	1835	01	3470	047
10	96483	99	515675	57	483140	58	2535	00	2777	50
20	14301281	98	482118	46	448882	46	3236	00	2084	40
30	06079	98	448572	36	414636	37	3936	01	1390	30
40	10877	99	415036	25	380399	26	4637	01	0697	20
50	19676	98	381511	13	346173	15	5338	02	0003	10
14 0	20474	98	347998	01	311958	03	6040	02	9308	046
10	25272	99	314497	89	277755	89	6741	01	8614	50
20	30070	98	281008	78	243565	78	7443	01	7919	40
30	34868	98	247530	66	209385	68	8145	02	7225	30
40	39666	99	214064	55	175217	58	8847	03	6530	20
50	44464	98	180609	44	141059	47	9550	03	5834	10
15 0	49262	98	147165	32	106918	35	0253	04	5159	045
10	54060	99	113733	20	072777	24	0956	04	4443	50
20	58858	98	080313	09	038653	12	1660	03	3747	40
30	63656	98	046904	97	004541	01	2363	04	3051	30
40	68454	99	013507	85	970440	89	3067	04	2354	20
50	73252	97	980122	74	936351	78	3771	05	1657	10
16 0	78049	98	946748	63	902373	68	4475	05	0960	044
10	82847	99	913385	52	868205	56	5180	05	0263	50
20	87645	98	880033	40	834149	45	5884	05	9566	40
30	92443	97	846693	29	800104	34	6589	06	8868	30
40	97140	98	813364	17	766070	23	7294	06	8170	20
50	14402038	97	780047	06	732047	12	8000	07	7472	10
17 0	06835	98	746741	95	698035	01	8706	07	6774	043
10	11633	97	713446	84	664034	91	9412	07	6075	50
20	16430	98	680162	73	630043	79	0119	06	5376	40
30	21228	97	646889	61	596064	68	0825	07	4677	30
40	26025	98	613628	50	562096	57	1532	07	3978	20
50	30823	97	580378	38	528139	45	2239	08	3279	10
60	35620	97	547140		494194		2946		2579	042

Grad. 8.

S. M.

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Grad. 8.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinu.	D.
18 6	14435620	97	193	28	494194	36	2946	8	1579	60
10	40417	98	513912	16	460258	23	3654	07	1879	50
20	45215	477	480696	04	426335	12	4361	708	1179	40
30	50012	477	447492	94	392423	02	5069	01	0478	30
40	54809	98	414298	82	358521	90	5777	00	9778	20
50	59606	97	381116	71	324631	80	6485	99	9077	10
19 0	64404	97	347945	61	290751	69	7194	08	8376	041
10	69201	97	314784	49	256882	58	7902	08	7674	50
20	73998	98	281635	37	223024	46	8611	09	6973	40
30	78795	97	248498	26	189178	36	9320	10	6271	30
40	83592	98	215372	14	155342	24	0030	106	5569	20
50	88389	97	182158	02	121518	12	0740	11	4866	10
20 0	93186	96	149156	91	087706	01	1450	12	4164	040
10	97983	97	116065	80	053905	79	2160	12	3461	50
20	14502780	98	082985	69	020114	91	2871	10	2758	40
30	07577	96	049916	59	986335	70	3581	11	2055	30
40	12373	97	016857	48	952565	59	4292	11	1351	20
50	17170	192	983809	38	918806	50	5003	12	0648	10
21 0	21965	96	950771	27	885056	38	5715	11	9944	039
10	26764	97	917744	16	851318	28	6426	12	9240	50
20	31560	96	884728	03	817590	15	7138	12	8535	40
30	36357	97	851725	92	783875	05	7850	13	7831	30
40	41154	96	818733	79	750170	02	8563	13	7126	20
50	45950	97	785754	68	716478	81	9276	14	6421	10
22 0	50747	96	752786	58	682797	72	9989	14	5715	038
10	55543	97	719828	47	649125	60	0703	13	5010	50
20	60340	96	686881	35	615465	49	1416	14	4304	40
30	65136	97	653946	25	581816	38	2130	13	3598	30
40	69933	96	621021	14	548178	28	2843	14	2892	20
50	74729	97	588107	03	514550	17	3557	15	2185	10
23 0	79525	96	555204	93	480933	08	4271	15	1478	037
10	84322	97	522311	82	447325	96	4986	14	0771	50
20	89118	96	489429	71	413729	86	5700	15	0064	40
30	93914	97	456558	59	380143	74	6415	16	9357	30
40	98711	96	423699	48	346569	64	7130	16	8649	20
50	14603507	97	390851	36	313005	52	7846	17	7941	10
60	08303	98	358055		279453		8562		7233	036

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.	
24	0 14608303	4796	192 358015	16 318	191 279453	42 335	107 8561	16 16	9892 7233	08 60	
10	13099		192 325189	15 318	145911	32 335	9278	17 17	6515	50	
20	17895		292374	05 317	212379	21 314	9995	16 16	5816	40	
30	22691		259569	94 317	178858	11 314	0711	17 17	5107	30	
40	27487		226775	82 317	145347	99 314	1428	18 18	4398	20	
50	32283		193993	71 317	111848	88 314	2145	19 19	3689	10	
25	0 37079	95	161222	60 191	078360	78 335	2862	18 18	2980	10	035
10	41875	96	128462	50 191	044882	67 335	3580	17 17	2270	50	
20	46671	96	095712	39 191	011415	57 335	4297	18 18	1560	40	
30	51467	95	062973	27 190	977958	45 335	5015	19 19	0850	30	
40	56262	96	030246	16 190	944513	35 335	5733	20 20	0139	20	
50	61058	96	997530	05 191	911078	24 335	6452	21 21	9429	10	
26	0 65854	95	964825	95 316	877654	14 335	7171	20 20	8718	0	034
10	70650	95	932130	84 316	844240	04 335	7890	19 19	8007	50	
20	75445	96	899446	72 316	810836	91 335	8610	18 18	7295	40	
30	80241	95	866774	62 316	777445	82 335	9329	17 17	6584	30	
40	85036	95	834112	51 316	744063	71 335	0049	16 16	5872	20	
50	89832	96	801461	40 316	710691	60 335	0769	15 15	5160	10	
27	0 94628	95	768821	25 315	677332	50 335	1489	14 14	4447	0	033
10	99423	96	736192	18 315	643982	38 335	2210	13 13	3735	50	
20	14704119	95	703574	07 315	610644	28 335	2930	12 12	3022	40	
30	09014	96	670967	9 315	577316	18 335	3651	11 11	2309	30	
40	13809	95	638370	81 315	543998	07 335	4372	10 10	1596	20	
50	18605	95	605784	7 315	510691	97 335	5093	9 9	0882	10	
28	0 23400	96	573209	6 315	477394	86 335	5815	22 22	0169	0	032
10	28195	95	540644	5 315	444108	76 335	6536	21 21	9455	50	
20	32991	95	508090	4 315	410832	65 335	7258	20 20	8741	40	
30	37786	95	475547	3 315	377567	54 335	7980	19 19	8026	30	
40	42581	95	443016	2 315	344313	43 335	8703	18 18	7312	20	
50	47376	95	410496	1 315	311070	33 335	9426	17 17	6597	10	
29	0 52171	96	377986	0 314	277837	23 335	0149	16 16	5882	0	031
10	56966	95	345486	81 314	244614	13 335	0872	15 15	5166	50	
20	61761	95	312997	7 314	211401	00 335	1596	14 14	4451	40	
30	66556	95	280520	6 314	178201	91 335	2319	13 13	3735	30	
40	71351	95	248053	5 314	145010	80 335	3043	12 12	3019	20	
50	76146	95	215597	4 314	111830	70 335	3767	11 11	2303	10	
60	80941	95	183152	4 314	078660	60 335	4492	10 10	1588	0	030

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S.M.

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M. S.	Sinn.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinn.	D.	
30	0	14780941	183152	34	078660	31	4492	24	1586	16	60
10	85736	101	150718	23	045502	48	5216	14	0870	50	50
20	90531	785	118295	12	012354	37	5941	715	0153	17	40
30	95326	94	085283	02	979217	27	6666	9435	9139	18	30
40	14800120	95	053481	91	946090	17	7391	8712	8000	17	20
50	04915	100	021090	79	912973	05	8117	8000	8000	16	10
31	0	09710	088711	69	879868	95	8843	7232	7232	029	
10	14504	95	056342	58	846773	85	9569	6564	6564	50	
20	19299	94	923984	48	813688	74	0296	5846	5846	19	40
30	24094	94	891636	38	780614	65	1021	5127	5127	18	30
40	28888	95	859298	27	747549	54	1749	4409	4409	19	20
50	33683	94	826971	17	714495	44	2476	3690	3690	10	
32	0	38477	794654	06	681451	34	3203	2971	2971	10	028
10	43271	94	762348	95	648417	24	3931	2251	2251	50	
20	48066	94	730053	84	615395	12	4658	1531	1531	40	
30	52860	95	697769	74	582383	02	5386	0811	0811	30	
40	57655	94	665495	63	549381	91	6114	0091	0091	20	
50	62449	94	633233	51	516390	80	6843	9370	9370	10	
33	0	67243	600982	41	483410	70	7572	8650	8650	11	027
10	72038	54	568741	31	450440	60	8301	7929	7929	50	
20	76832	94	536510	20	417480	49	9030	7208	7208	12	40
30	81626	94	504290	10	384531	40	9759	6486	6486	21	30
40	86420	94	472080	00	351591	30	0489	5765	5765	12	20
50	91214	94	439880	89	318661	20	1219	5043	5043	10	
34	0	96008	407691	78	285741	08	1950	4321	4321	026	
10	14900802	94	375513	67	252833	98	2680	3599	3599	50	
20	05596	94	343346	57	219935	88	3411	2876	2876	40	
30	10390	94	311189	47	187047	78	4142	2153	2153	30	
40	15184	94	279042	36	154169	67	4873	1430	1430	20	
50	19978	94	246906	25	121392	57	5604	0707	0707	10	
35	0	24772	214781	15	088445	47	6336	9984	9984	14	029
10	29566	94	182666	04	055598	36	7068	9260	9260	50	
20	34360	93	150562	94	022761	27	7800	8536	8536	40	
30	39153	94	118468	84	989935	16	8533	7812	7812	30	
40	43947	94	086384	73	957119	06	9265	7088	7088	20	
50	48741	93	054311	62	924313	95	9998	6363	6363	10	
60	53534	93	022249	51	891518	84	0731	5638	5638	024	

Grad. 81.

S.M.

Grad. 8.

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M. S.	Sinus.	D.	Logarith.	D.	Difference.	D.	Logar.	D.	Sinus.	D.
36 0	14953534	93	10022249	50	891518	83	0731	33	5638	60
10	58328	94	990199	40	858735	74	1464	34	4913	50
20	63122	93	958158	30	825961	63	2198	33	4188	40
30	67919	94	926129	20	793198	54	2931	34	3461	30
40	72709	93	894109	10	760444	44	3665	35	2736	20
50	77502	94	862099	00	727700	35	4399	35	2010	10
37 0	82295	94	830099	89	694965	23	5134	34	1284	023
10	87089	93	798110	78	662242	13	5868	35	0558	27
20	91882	94	766132	68	629529	03	6603	36	9831	40
30	96676	93	734164	58	596826	94	7338	36	9104	30
40	1001469	94	702206	48	564131	84	8074	37	8377	20
50	06261	93	670258	37	531448	73	8810	37	7649	10
38 0	11055	94	638324	28	498775	62	9546	37	6922	022
10	15849	93	606395	18	466115	52	10281	36	6194	50
20	20642	94	574480	08	433462	41	1019	36	5466	40
30	25435	93	542555	99	400820	31	1755	37	4737	30
40	30228	94	510688	89	368188	21	2492	37	4009	20
50	35021	93	478796	79	335567	11	3229	38	3280	10
39 0	39814	94	446923	69	302950	00	3967	37	2551	021
10	44607	93	415060	59	270396	91	4704	38	1822	50
20	49400	94	383207	49	237765	81	5442	38	1092	40
30	54195	93	351364	39	205184	71	6180	39	0363	30
40	58988	94	319532	29	172613	61	6919	39	9633	20
50	63778	93	287710	19	140052	51	7658	40	8902	10
40 0	68571	94	255898	09	107501	40	8397	40	8172	020
10	73364	93	224097	99	074961	30	9136	40	7441	50
20	78157	94	192307	89	042431	19	9876	39	6710	40
30	82949	93	160527	79	009912	10	10615	40	5979	30
40	87742	94	128757	69	977402	00	1355	41	5248	20
50	92535	93	096997	59	944902	90	2095	41	4516	10
41 0	97327	94	065247	49	912412	80	2835	41	3784	019
10	1002120	93	033508	39	879932	69	3576	40	3052	50
20	06912	94	001779	29	847463	60	4316	41	2320	40
30	11705	93	970060	19	815003	49	5057	42	1588	30
40	16497	94	938332	08	782554	40	5798	42	0855	20
50	21290	93	906654	98	750114	30	6540	43	0122	10
60	26082	94	874966	88	717684	20	7282	43	49389	018

Grad. 81.

S.M.

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Grad. 8.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
42 °	15126082	92	874966	108	717684	19	7282	42	9389	60
10	30874	93	843389	316	685265	10	8014	43	8655	50
20	35667	4502	811622	57	652855	99	8767	44	7921	40
30	40459	92	779965	47	620456	80	9509	45	7187	30
40	45251	93	748318	37	588066	70	10252	46	6453	20
50	50043	91	716681	27	555686	60	109995	47	5719	10
43 °	54836	92	685054	16	523316	50	1738	48	4984	35
10	59628	91	653438	06	490956	49	2482	49	4250	34
20	64420	315	621832	96	458607	40	3225	50	3515	33
30	69212	86	590236	86	426267	36	3969	51	2779	32
40	74004	76	558650	76	393937	30	4713	52	2044	31
50	78796	65	527074	65	361617	20	5457	53	1308	30
44 °	83588	55	495509	55	329307	10	6202	54	0572	29
10	88380	45	463954	45	297007	00	6947	55	9836	28
20	93171	34	432409	34	264717	90	7692	56	9099	27
30	97963	24	400875	24	232437	80	8438	57	8336	26
40	1502755	14	369351	14	200168	69	9183	58	7625	25
50	07547	04	337837	04	167908	60	9929	59	6888	24
45 °	12339	94	306333	94	135658	50	10675	60	6151	23
10	17130	84	274839	84	103417	41	11422	61	5413	22
20	21922	74	243355	74	071187	30	12168	62	4675	21
30	26714	64	211881	64	038966	21	12915	63	3937	20
40	31505	53	180417	53	006755	11	13662	64	3199	19
50	36297	43	148964	43	974555	00	14409	65	2461	18
46 °	41088	33	117521	33	942364	91	15157	66	1722	39
10	45880	23	086088	23	910184	80	15904	67	1083	38
20	50671	13	054665	13	878013	71	16652	68	0243	37
30	55463	02	023152	02	845852	61	17400	69	9504	36
40	60254	92	991850	92	813701	51	18149	70	8764	35
50	65047	82	960458	82	781560	41	18898	71	8024	34
47 °	69837	72	929076	72	749419	31	19647	72	7284	33
10	74628	62	897704	62	717308	21	20396	73	6544	32
20	79419	52	866342	52	685196	12	21145	74	5803	31
30	84210	42	834990	42	653095	02	1895	75	5062	30
40	89001	32	803648	32	621003	92	2645	76	4321	29
50	93793	22	772316	22	588921	82	3395	77	3580	28
60	98584	12	740994	12	556849	72	4145	78	2838	27

Grad. 81.

S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar. D.	Sinus.	D.
48 0	15298584	4791	740994	12	556349	63	-4145	92838	60
10	15303375		709682	02	524786	30	4896	1096	50
20	08166		678330	91	492713	53	5647	1354	40
30	12957		647088	82	460690	43	6398	0611	30
40	17748		615806	72	428657	33	7149	9869	20
50	22539	90	584534	61	396633	24	7901	9127	10
49 0	27329	91	553273	52	364610	13	8653	8384	01
10	32120		521021	42	332616	04	9405	7641	50
20	36911		490779	31	300621	95	0158	6897	40
30	41702	90	459548	22	268638	83	0910	6153	30
40	46492	91	428316	11	236663	73	1665	5409	20
50	51283		397115	02	204699	64	2416	4665	10
50 0	56074	90	365913	92	172744	55	3169	3921	010
10	60864	91	334721	81	140798	46	3923	3176	50
20	65655		303538	73	108863	35	4676	2432	40
30	70446	90	272366	63	076936	27	5430	1687	30
40	75236	91	241203	54	045019	17	6184	0941	20
50	80027	90	210049	44	013110	09	6939	0196	10
51 0	84817		178905	33	981211	99	7694	9450	09
10	89607	91	147772	23	949373	88	8449	8704	50
20	94398	90	116649	13	917444	79	9205	7958	40
30	99188		085536	02	885576	68	9960	7211	30
40	1040398	91	054434	92	853718	58	0716	6465	20
50	08764	90	023341	82	821870	48	1472	5718	10
52 0	13556		991260	72	790032	38	1228	4970	08
10	18340	90	961188	63	758203	29	2985	4223	50
20	23124		930125	53	726384	19	3741	3475	40
30	27915		899072	43	694574	00	4498	2720	30
40	32714		868029	33	662774	90	5255	1980	20
50	37509		836956	24	630984	82	6012	1231	10
53 0	42295		805972	14	599202	71	6770	0483	07
10	47084		774958	04	567431	62	7527	9734	50
20	51879		743954	94	535669	52	8285	8985	40
30	56669		712960	84	503917	43	9043	8236	30
40	61459		681976	74	472174	33	9802	7486	20
50	66249		651002	65	440441	25	0561	6736	10
60	71039		620037		408716	11	1321	5987	06

Grad. 81.

S.M.

Grad. 8.

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M. S.	Sinus.	D.	Logarith	D.	Different	D.	Logar	D.	Sinus.	D.		
54°	15471039	89	610037	309	55	125	408716	14	1321	59	5986	60
10	75828	90	589082	45	55	377002	17	1080	60	5236	50	
20	80618	89	558137	35	55	345297	05	1840	60	4486	40	
30	85408	89	527203	25	55	313623	94	3599	59	3735	30	
40	90197	90	496277	15	55	281918	85	4339	70	2984	20	
50	94987	89	465362	05	55	250243	75	5119	61	2233	10	
55°	99777	89	434457	96	56	218577	66	5880	60	1482	52	05
10	15504566	90	403561	86	56	186921	56	6640	61	0730	51	50
20	09356	89	371675	76	56	155274	47	7401	61	9979	52	40
30	14145	90	341799	67	56	123637	37	8162	62	9227	53	30
40	18934	90	310932	57	56	091008	29	8924	62	8474	52	20
50	23724	89	280075	47	56	060389	09	9686	63	7722	53	10
56°	28513	90	249228	37	56	028780	99	10448	63	6969	54	04
10	33302	90	218391	27	56	997181	90	1210	63	6216	50	
20	38092	89	187564	18	56	965591	80	1973	62	5463	40	
30	42881	90	156746	08	56	934011	71	2735	63	4710	54	30
40	47670	89	125938	98	56	902440	62	3498	63	3956	20	
50	52459	90	095140	88	56	870879	52	4261	64	3202	10	
57°	57248	90	064352	79	56	839327	42	5025	63	2448	03	
10	62038	89	033573	69	56	807785	33	5788	64	1694	55	50
20	66827	90	002804	60	56	776252	24	6552	64	0939	55	40
30	71616	89	972044	50	56	744728	15	7316	65	0184	30	
40	76405	90	941294	40	56	713213	05	8081	65	9420	20	
50	81194	89	910554	31	56	681708	96	8846	66	8674	10	
58°	85982	90	879823	21	56	650212	86	9611	66	7918	55	02
10	90771	89	849102	11	56	618726	77	10376	66	7163	50	
20	95560	90	818391	01	56	587249	68	11142	65	6407	56	40
30	15600349	89	787690	91	56	555783	58	1907	66	5652	57	30
40	05138	90	756998	82	56	524325	48	2673	66	4894	56	20
50	09926	89	726316	72	56	492877	38	3439	67	4137	57	10
59°	14713	90	695644	63	56	461439	30	4205	67	3382	04	
10	19504	89	664981	53	56	430009	29	4972	66	2623	50	
20	24292	90	634328	44	56	398590	19	5738	67	1866	40	
30	29081	89	603684	34	56	367179	09	6505	68	1108	30	
40	33870	90	573050	25	56	335778	93	7272	68	0350	20	
50	38658	89	542425	15	56	304385	83	8040	90	9592	10	
60	43447	90	511810	05	56	273002	73	8808	90	8834	00	

Grad. 81.

S.M.

Grad. 9.

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M.S.	Sinus	D.	Logarith	D.	Different	D.	Logar.	D.	Sinus.	D.
0 0	15643446	89	511810	306308	05	273002	73	5808	8834	60
10	48135	88	481205	184	95	241629	63	9576	8075	50
20	5723	89	450610	86	95	210266	55	0344	7317	40
30	57812	481	410024	76	178911	44	1113	69	6558	30
40	61600	481	389448	66	147567	35	1881	68	5798	20
50	67183	481	358882	57	116232	26	2650	69	5039	10
1 0	72176	89	328325	47	084906	17	3419	70	4279	059
10	76969	88	297778	38	053589	07	4189	69	3519	50
20	81753	89	267240	29	022282	99	4958	70	2759	40
30	86541	184	236711	19	990383	89	5728	71	1999	30
40	91329	184	206192	09	959694	79	6498	70	1238	20
50	96117	184	175683	00	928415	71	7268	71	0477	10
2 0	15700505	184	145183	91	897144	61	8039	71	9716	058
10	05693	184	114692	81	865883	51	8809	71	8955	50
20	10481	184	084211	71	834631	42	9580	71	8193	40
30	15269	184	053740	61	803389	34	0351	72	7412	30
40	20057	184	023278	52	772155	24	1123	72	6670	20
50	24845	184	992816	43	740931	16	1895	73	5907	10
3 0	29633	87	962383	33	709715	08	2668	72	5145	057
10	34420	88	931950	24	678510	97	3440	73	4382	50
20	39208	88	901520	15	647313	88	4213	73	3619	40
30	43996	87	871111	05	616125	78	4986	74	2856	30
40	48783	88	840706	96	584947	69	5759	74	2093	20
50	53571	88	810310	86	553778	60	6532	74	1329	10
4 0	58359	87	779924	76	522618	49	7306	73	0565	056
10	63146	88	749548	67	491469	41	8079	74	9801	50
20	67934	87	719181	57	460328	31	8853	74	9037	40
30	72721	88	688824	47	429197	22	9627	75	8272	30
40	77509	87	658477	38	398075	13	0402	75	7507	20
50	82296	87	628139	28	366962	03	1177	76	6742	10
5 0	87083	88	597811	19	335859	94	1932	76	5977	055
10	91871	87	567492	10	304765	86	2727	76	5212	50
20	96658	87	537182	01	273679	76	3503	75	4446	40
30	15801445	88	506881	93	242603	69	4278	76	3680	30
40	06232	88	476588	83	211534	59	5054	76	2914	20
50	11020	87	446305	74	180475	51	5830	77	2147	10
60	15807	87	416031	64	149424	42	6607	77	1381	054

Grad. 80.

15.M.

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Grad. 9.

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M.S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logar.	D	Sinus.	D
6 0	15815807	4737	416031	302	149424	310	6607	76	1381	62
10	20594	184	385767	54	118384	31	7383	77	0614	50
20	15381	184	355513	45	087353	23	8160	78	9847	10
30	30168		325268	35	056330	12	8938	77	9079	30
40	34955		295031	25	025318	03	9715	76	8312	20
50	39742		264808	16	994315	94	0493	127	7544	10
7 0	44529		234592	06	963321	309	1271	79	6776	053
10	49316	86	204386	97	932336	75	2050	78	6008	50
20	54102	87	174189	88	901361	67	2828	79	5239	40
30	58889		144001	78	870394	56	3607	78	4470	30
40	63676		113823	69	839438	48	4385	79	3701	20
50	68463		083654	60	808490	39	5164	79	2932	10
8 0	73249	86	053494	51	777551	31	5943	80	2163	052
10	78036	87	023343	42	746620	23	6723	80	1393	50
20	82823	86	993201	33	715699	13	7501	79	0623	40
30	87609	87	963068	24	684786	04	8281	80	9853	30
40	92396	86	932945	14	653882	95	9062	781	9093	20
50	97182	87	902830	05	621987	86	9843	81	8312	10
9 0	15901969	86	872725	95	592101	76	0624	128	7541	051
10	06755	87	842630	86	561225	68	1405	82	6770	50
20	11442	86	812544	76	530357	57	2187	81	5999	40
30	16328		781468	67	499500	49	2962	82	5217	30
40	21114		752401	57	468654	39	3750	81	4455	20
50	25901	86	722344	48	437812	30	4532		3683	10
10 0	30687		692296	39	406982	22	5314	83	2911	050
10	35473		662257	30	376160	12	6097	82	2139	73
20	40259		632227	21	345348	04	6879	83	1366	50
30	45045		602206	12	314544	95	7662	84	0593	30
40	49831		572194	03	283749	86	8445	83	9820	20
50	54617	86	542191	93	252963	77	9228	82	9047	10
11 0	59403		512198	84	222186	67	0012	84	8273	049
10	64189		482214	75	191419	59	0795	84	7499	50
20	68975		452239	66	160660	50	1579		6725	40
30	73761		422273	56	129910	41	2363	85	5951	30
40	78547		392317	47	099169	32	3148		5176	20
50	83333		362370	38	068437	24	3933	86	4401	10
60	88119		332432		037713		4719		3626	04

Grad. 80.

S.M.

Grad. 9.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Log ar.	D.	Sinus.	D.
12 0	15988119	85	332432	18	037713	13	4719	85	3626	60
10	92904	85	302504	19	007000	13	5504	85	2851	50
20	97690	86	272585	10	976295	96	6290	786	1076	40
30	16001476	85	242675	02	945599	88	7076	87	1300	30
40	07261	86	212773	92	914911	78	7862	86	0524	20
50	12047	85	182881	83	884233	70	8648	87	9748	10
13 0	16833	85	152998	74	853963	60	9435	86	8972	047
10	21618	86	123124	65	822903	52	0221	87	8195	50
20	26404	85	093259	56	792251	43	01008	88	7418	40
30	31189	86	063403	48	761608	36	1795	88	6641	30
40	35975	85	033555	39	730972	27	2583	87	5864	20
50	40760	86	003716	30	700345	18	3371	88	5086	10
14 0	45545	86	973886	20	669727	08	4159	89	4308	046
10	50331	85	944066	11	639119	00	4947	89	3530	50
20	55116	86	914255	02	608519	90	5736	88	2752	40
30	59901	85	884453	91	577929	81	6524	88	1973	79
40	64686	86	854661	83	547348	72	7313	89	1195	78
50	69471	86	824878	73	516776	63	8102	90	0416	79
15 0	74257	85	795105	63	486213	52	8892	89	9637	80
10	79042	86	765342	53	455661	43	9681	89	8857	045
20	83827	85	735589	44	425118	34	0471	90	8078	79
30	88612	86	705845	35	394584	26	1261	91	7298	80
40	93397	85	676110	26	364058	17	2052	91	6518	30
50	98182	86	646384	17	333541	08	2843	92	5737	20
16 0	16102966	84	616667	09	303033	00	3634	92	4957	81
10	07751	85	586958	00	272533	91	4425	91	4176	044
20	12536	86	557258	91	242041	82	5217	91	3395	50
30	17321	85	527567	83	211559	73	6008	92	2613	40
40	22106	84	497884	73	181084	65	6800	92	1832	30
50	26890	85	468211	64	150619	56	7592	93	1050	20
17 0	31675	84	438547	55	120163	48	8384	93	0268	81
10	36460	85	408892	46	089715	38	9177	92	9486	043
20	41244	86	379246	37	059277	30	9969	93	8704	50
30	46029	85	349609	29	028847	22	0762	94	7922	40
40	50813	84	319980	20	998425	14	1555	94	7138	30
50	55598	85	290360	10	968011	04	2349	94	6355	20
60	60382	84	260750	10	937607	04	3143	94	5573	82

Grad. 80.

S.M

Grad. 9.

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W. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
18 0	16160382		1260750		937607	301	53143		100688	60
10	681666	84	231145	296	907212	87	3937	94	4788	50
20	69951	88	201557	295	876825	77	4732	94	4004	40
30	74735	84	171974	83	846448	70	5326	795	3220	30
40	79519	85	142399	75	816078	61	6321	795	2436	20
50	84304	85	112833	66	785717	53	7116	795	1651	10
19 0	89088	4784	083273	58	755364	45	7911	96	0867	84
10	93872	4	053726	49	725019	35	8707	96	0082	85
20	98656	4	024186	40	694684	27	9502	95	9286	85
30	16203440	181	994655	31	664357	18	1028	96	8511	86
40	081224	181	965133	23	634039	10	1094	97	7725	20
50	17008	181	935620	13	603729	00	1891	97	6939	10
20 0	17792		906117	03	573429	90	2688		6153	40
10	22576	294	876624	93	543119	81	3485		5367	50
20	27360	294	847140	84	512858	73	4282		4580	40
30	3214		817665	75	482585	62	5080	98	3793	30
40	36928		788200	65	452323	54	5877	97	3006	40
50	43712		758744	56	422069	45	6675	98	2219	10
21 0	46495	83	729297	47	391824	38	7473		1431	88
10	51279	84	699858	39	361586	28	8272	99	0644	87
20	56063	83	670428	30	331358	21	9070	98	9856	88
30	60846	84	641006	22	301137	13	9869	99	9067	89
40	65630	85	611592	14	270924	05	10668		8279	88
50	70415	84	582186	06	240719	95	1467		7490	89
22 0	75199	83	552790	96	210524	87	2266	900	6701	038
10	79980	84	523403	87	180337	78	3066		5912	50
20	84764	83	494025	78	150159	69	3866		5123	40
30	89547	84	464656	69	119990	62	4666	01	4333	30
40	94331	83	435295	61	89828	53	5467		3543	20
50	99114	83	405943	52	059675	45	6268	01	2753	10
23 0	16303897	84	376600	43	029530	35	7070	01	1963	037
10	08681	83	347266	34	999395	27	7871	01	1171	91
20	13464		317541	25	969268	17	8673	01	0381	40
30	18247		288625	16	939151	09	9474	02	99590	30
40	23030		259318	07	909041	00	1076	02	8799	20
50	27813		230010	98	878941	92	1078	03	8008	10
60	32596		200731	89	848850	300	1881		721691	036

Grad. 80.

S.M.

Grad. 9.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
24 0	16332596		1200731	80	848850	82	1881	02	7216	60
10	37379	4783	171451	292	813768	75	2683	03	6414	50
20	42162		142179	64	788693	67	3486	04	5632	40
30	46945		112915	55	758686	59	4289	05	4840	30
40	51728		083640	47	728567	51	5093	06	4047	20
50	56511		054413	38	698516	42	5897	07	3254	10
25 0	61294		025175	29	668474	33	6701	08	2462	035
10	66097	82	995946	20	638441	25	7505	09	1668	50
20	70859	83	966726	10	608416	14	8310	10	0874	40
30	75641		937516	01	578402	06	9114	11	0080	30
40	80425	81	908315	91	548394	88	9919	12	9286	20
50	85207	83	879123	83	518399	79	0724	13	8492	10
26 0	89990	82	849940	75	488411	80	1529	14	7698	034
10	94772	83	820765	66	458431	72	2334	15	6903	50
20	99555	82	791599	58	428455	64	3140	16	6108	40
30	16404337	83	762441	50	398455	57	3946	17	5313	30
40	09120	81	733291	42	368538	49	4753	18	4517	20
50	13902	83	704149	33	338585	40	5560	19	3722	10
27 0	18685	82	675016	24	308649	31	6367	20	2926	033
10	23467		645892	14	278718	22	7174	21	2130	50
20	28249	83	616778	05	248796	12	7982	22	1333	40
30	33032	82	587673	97	218884	05	8789	23	0537	30
40	37814		558576	88	188979	96	9597	24	9740	20
50	42596		529488	79	159083	88	0405	25	8943	10
28 0	47378		500409	71	129195	79	1214	26	8146	032
10	52160		471338	62	099316	71	2022	27	7348	50
20	56942		442276	53	069445	62	2831	28	6550	40
30	61724		413223	45	039583	53	3640	29	5752	30
40	66506		384178	36	009718	45	4450	30	4954	20
50	71288		355142	28	979883	38	5259	31	4156	10
29 0	76070		326114	20	950045	30	6069	32	3357	031
10	80852		297094	11	920215	21	6879	33	2558	50
20	85634	81	268083	02	890354	12	7689	34	1759	40
30	90415	82	239081	92	860582	03	8499	35	0960	30
40	95197		210089	83	830779	93	9310	36	0160	20
50	99979		181106	75	800986	86	0120	37	9360	10
30	16504761		152133		771200		0931		8560	030

Grad. 30.

S.M.

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Grad. 9.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.		
30	0	16504760	4782	150	11711200	397	79	150	0931	11	8560	60
10		09542	150	11711200	397	71	150	1742	11	8662	50	
20		14324	81	094204	59	61	150	2554	11	8762	40	
30		19103	81	065255	49	52	3366	13	8859	30		
40		23887	81	036315	40	44	4178	13	8958	20		
50		28668	81	007383	32	37	4990	13	9056	10		
31	0	33450	81	978459	24	27	5803	13	9151	01		
10		38231	179	949544	15	20	6615	13	9244	02		
20		43013	81	920637	07	11	7428	13	9339	03		
30		47794	81	891739	28	03	8241	14	9434	04		
40		52575	81	862850	19	206	9055	15	9529	05		
50		57357	81	833969	11	87	9869	15	9624	06		
32	0	62138	81	805097	72	78	0684	15	9719	07		
10		66919	81	776233	64	71	1498	15	9814	08		
20		71700	81	747377	56	62	2313	15	9909	09		
30		76481	81	718530	47	54	3128	16	0004	10		
40		81262	81	689691	39	45	3943	16	0099	11		
50		86043	81	660861	30	37	4758	16	0194	12		
33	0	90824	81	632040	21	27	5574	16	0289	13		
10		95605	81	603228	12	20	6389	16	0384	14		
20		100386	81	574424	04	11	7205	16	0479	15		
30		05167	81	545629	95	04	8021	17	0574	16		
40		09948	81	516842	87	78	8838	17	0669	17		
50		14728	81	488064	78	69	9655	17	0764	18		
34	0	19509	81	459294	70	58	0472	18	0859	19		
10		24290	81	430533	61	49	1287	18	0954	20		
20		29070	81	401780	53	40	2107	18	1049	21		
30		33851	81	373036	44	31	2924	17	1144	22		
40		38632	81	344300	36	22	3742	18	1239	23		
50		43412	81	315573	27	13	4560	19	1334	24		
35	0	48193	81	286855	18	04	5379	19	1429	25		
10		52973	81	258145	10	28	6197	19	1524	26		
20		57753	81	229443	02	19	7016	19	1619	27		
30		62534	81	200750	93	12	7835	20	1714	28		
40		67314	81	172064	86	06	8655	20	1809	29		
50		72094	81	143387	77	99	9475	21	1904	30		
60		76875	81	114718	69	89	10295	21	2000	31		

Grad. 80.

S.M.

Grad. 9.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.	
36 0	16676875	4780	114718	58	177	704423	141	0295	9859	209	60
10	81655		086060	50	177	674945	71	1115	8795	50	50
20	86435		057410	42	177	645474	63	1936	7986	40	40
30	91215		018768	35	177	616012	56	2756	7177	30	30
40	95995		000133	27	177	586556	48	3577	6368	20	20
50	16700775	178	971506	19	177	557108	41	4398	5558	10	10
37 0	05555		942887	10	177	527667	33	5220	4748	023	
10	10335		914277	03	177	498236	24	6041	3938	50	50
20	15115		885675	93	177	468812	15	6863	3128	40	40
30	19895		857082	84	177	439397	07	7685	2318	30	30
40	24675		828498	75	177	409990	97	8508	1507	20	20
50	29455		799923	66	177	380593	89	9330	0696	10	10
38 0	34235		771357	58	177	351204	80	0153	9885	022	
10	39015		742799	50	177	321824	73	0975	9073	50	50
20	43794		714249	42	177	292451	65	1798	8262	40	40
30	48574		685707	34	177	263086	58	2621	7450	30	30
40	53354		657173	25	177	233728	49	3445	6638	20	20
50	58133		628648	17	177	204379	42	4269	5825	10	10
39 0	62913		600121	09	177	175037	33	5094	5013	021	
10	67693		571622	00	177	145704	25	5918	4200	50	50
20	72472		543122	92	177	116379	17	6743	3387	40	40
30	77251		514630	84	177	087061	09	7568	2574	30	30
40	82031		486146	75	177	057753	00	8393	1760	20	20
50	86810		457671	66	177	028453	92	9218	0947	10	10
40 0	91590		429205	58	177	999161	83	0044	0133	020	
10	96369		400747	50	177	969878	76	0865	9312	50	50
20	16801148		372297	42	177	940602	68	1695	8504	40	40
30	05927		343855	33	177	911334	60	2521	7685	30	30
40	10706		315422	25	177	882074	52	3348	6874	20	20
50	15485		286997	17	177	852822	45	4175	6055	10	10
41 0	20264		258580	09	177	823577	38	5003	5244	019	
10	25043		230171	00	177	794341	28	5830	4428	50	50
20	29822		201771	91	177	765113	19	6658	3612	40	40
30	34601		173380	83	177	735894	11	7486	2796	30	30
40	39380		144997	74	177	706683	02	8314	1980	20	20
50	44159		116623	66	177	677481	95	9142	1164	10	10
42 0	48937		088257		177	648286	91	9971	0347	018	

Grad. 80.

S.M.

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Grad. 9.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
42 0	6848938	79	088257	58	648286	86	39971	28	70347	60
10	53717	78	059899	50	17619100	79	0799	28	9530	50
20	58496	78	031549	42	589921	71	1618	28	8713	40
30	63274	79	003207	34	560750	64	2457	30	7895	30
40	68053	177	974873	26	531586	56	3287	30	7078	20
50	72832	78	946547	18	502430	49	4117	31	6260	10
43 0	77610	79	918229	10	473281	40	4948	30	5442	19 017
10	82389	78	889919	02	444141	33	5778	31	4623	18 50
20	87167	79	861617	93	415008	23	6609	30	3805	19 40
30	91946	78	833324	85	385885	16	7439	31	2986	30
40	96724	79	805039	76	356769	07	8270	31	2167	20 10
50	16901503	78	776763	67	327661	99	9101	32	1347	19 10
44 0	06281	79	748496	59	298563	90	9933	31	0528	10 016
10	11059	78	710237	51	269473	83	0764	32	9708	50
20	15838	79	691986	44	240390	76	1596	33	8888	40
30	20616	78	663742	35	211314	68	2428	33	8068	30
40	25394	79	635507	27	182246	60	3261	33	7248	20 10
50	30172	78	607280	18	153186	51	4094	34	6427	10
45 0	34950	79	579062	11	124135	44	4927	34	5606	015
10	39728	78	550851	03	095091	37	5760	34	4789	50
20	44507	79	522648	95	066054	28	6594	33	3963	40
30	49285	78	494453	86	037028	20	7427	34	3142	30
40	54063	79	466267	78	008006	12	8261	34	2320	20
50	58840	78	438085	69	978994	04	9065	35	1498	10
46 0	63618	79	409920	60	949990	94	9930	34	0676	014
10	68396	78	381760	51	920996	86	0764	35	9853	50
20	73174	79	353609	43	892010	78	1599	35	9030	40
30	77952	78	325466	35	863032	71	2434	36	8207	30
40	82730	79	297331	27	834061	62	3270	35	7384	20
50	87507	78	269104	20	805099	56	4105	36	6561	10
47 0	92285	79	241084	14	776143	49	4941	35	5737	013
10	97062	78	212970	07	747194	43	5776	36	4913	50
20	17001840	79	184863	99	718251	36	6612	37	4089	40
30	06618	78	156764	91	689315	28	7449	37	3264	30
40	11399	79	128673	82	660387	19	8286	38	2440	20
50	16173	78	100591	73	631468	11	9123	38	1615	10
60	20950	79	072518	64	602557	02	9961	39	0790	012

Grad. 80.

S.M.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
48°	17020950	77	071318	263	601557	285	69961	37	40790	60
10	25727	78	044455	54	573657	92	0798	38	9964	50
20	30505	4777	016401	46	544765	84	1636	38	9139	40
30	35182	176	988355	38	515881	77	2474	39	8313	30
40	40059	78	960317	30	487004	68	3313	38	7487	20
50	44836	78	932187	22	458136	61	4151	38	6661	10
49°	49614	77	904165	15	429275	54	4990	39	5834	27
10	54391	77	876250	07	400421	46	5829	40	5008	26
20	59168	78	848243	99	371575	38	6668	41	4181	27
30	63945	79	820244	91	342737	31	7507	41	3354	28
40	68722	80	792253	83	313906	23	8347	42	2526	30
50	73499	81	764270	74	285083	15	9187	43	1699	27
50°	78276	76	736296	67	256168	07	0028	44	0871	28
10	83053	77	708329	59	227461	00	0868	45	0043	010
20	87829	78	680370	51	198661	92	1709	46	9214	50
30	92606	79	652419	43	169869	84	2550	47	8386	40
40	97383	80	624476	34	141085	75	3391	48	7557	30
50	17102160	81	596542	26	112310	68	4232	49	6728	20
51°	06936	76	568616	19	083542	60	5074	50	5899	10
10	11713	77	540697	11	054782	53	5915	51	5069	09
20	16490	78	512786	02	026019	44	6757	52	4239	30
30	21266	79	484884	94	997285	37	7599	53	3410	40
40	26043	80	456990	86	968548	29	8442	54	2580	31
50	30819	81	429104	78	939819	21	9285	55	1749	20
52°	35596	76	401226	71	911097	14	0129	56	0918	10
10	40372	77	373355	63	882383	07	0972	57	0087	08
20	45149	78	345492	54	853676	00	1816	58	9256	50
30	49925	79	317638	46	824978	98	2660	59	8425	40
40	54701	80	289792	38	796188	90	3504	60	7593	30
50	59477	81	261954	30	767606	82	4348	61	6762	20
53°	64254	76	234124	23	738931	75	5193	62	5930	10
10	69030	77	206301	15	710264	67	6037	63	5097	07
20	73806	78	178486	06	681604	60	6982	64	4265	50
30	78582	79	150680	98	652953	51	7727	65	3432	40
40	83358	80	122882	90	624309	44	8573	66	2599	30
50	88134	81	095092	82	595673	36	9419	67	1766	20
60	92910	82	067310	74	567045	28	100265	68	0933	10

Grad. 80.

S.M.

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Grad. 9.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
54	17191910	4776	067310	177	567045	177	0165	46	0933	60
10	97686	176	039535	67	588424	176	1511	47	0099	50
20	17101461	176	011768	59	509810	175	1958	46	9265	40
30	07238	75	984009	51	481205	285	2804	47	8431	30
40	11013	76	956258	42	451607	89	3651	48	7597	20
50	16789	75	928516	34	424018	81	4498	47	6762	10
55	0	75	900782	27	395436	74	5346	47	5927	0
10	26341	75	879055	19	366862	67	6193	48	5092	50
20	31116	76	845336	11	338295	59	7041	48	4257	40
30	35892	75	817625	03	309736	52	7889	49	3421	30
40	40667	76	789922	95	281184	44	8738	49	2586	20
50	45441	75	762227	88	252640	37	9587	50	1750	10
56	0	76	734539	80	224103	29	0436	50	0914	0
10	54994	75	706859	72	195574	22	1285	49	0077	50
20	59765	76	679187	64	167052	13	2135	49	9240	40
30	64545	75	651523	56	138539	06	2984	50	8403	30
40	69320	75	623867	48	110033	98	3834	50	7566	20
50	74095	76	596219	40	081535	91	4684	51	6729	10
57	0	76	568579	32	053044	83	5535	51	5891	0
10	83646	75	540947	24	024561	74	6386	50	5054	50
20	88421	75	513323	17	996087	68	7236	51	4216	40
30	93196	76	485706	09	967619	60	8087	51	3377	30
40	97971	75	458097	02	939159	54	8938	52	2539	20
50	17302746	75	430495	93	910705	45	9790	52	1700	10
58	0	76	402902	86	882260	38	0641	53	0861	0
10	12297	75	375316	78	853822	31	1494	53	0022	50
20	17071	74	347738	69	825391	21	2347	52	9182	40
30	21846	75	310169	61	796970	14	3199	53	8343	30
40	26620	75	291608	53	768556	06	4052	53	7503	20
50	31395	74	265055	45	740150	98	4905	54	6663	10
59	0	74	237510	38	711752	92	5758	54	5822	0
10	40945	75	209972	30	683360	83	6612	53	4982	50
20	45720	74	182441	22	654977	76	7465	54	4141	40
30	50494	75	154920	15	626601	69	8319	55	3300	30
40	55269	74	127405	07	598232	62	9173	55	2459	20
50	60043	75	099898	99	569870	54	0028	55	1617	10
60	64818	74	072399	91	541516	45	0883	55	0775	0

Grad. 80.

S.M.

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M. S.	Sinus	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus	D.
0	17364818		072399	92	541516	153	0883	56	80775	60
10	69592	74	044907	83	513169	183	1738	56	99933	50
20	74367	75	017424	76	484830	39	2594	55	9091	40
30	79141	74	989948	68	456499	31	3449	55	8249	30
40	83915	174	962480	60	428175	24	4305	856	7406	20
50	88690	75	935020	52	399859	16	5161	57	6563	10
60		477	907568	45	371551	08	6017	57	5720	059
70	93464	4	880123	37	343249	02	6874	56	4877	50
80	98138		851686	29	314956	282	7730	57	4033	44
90	17403012			22	286670	86	8587	57	3189	30
0	07786	75	825257	13	258391	79	9444	58	2345	20
10	12561	74	797835	05	230120	71	0302	154	1501	10
20	17335		743017	98	201857	63	1160	59	0656	058
30	22109	73	715619	91	173601	56	2018	9846	9811	50
40	26883		688228	84	145352	49	2876	59	8966	40
50	31657	74	660844	75	117109	43	3735	58	8121	30
60	36430		633469	67	088876	33	4593	59	7276	20
70	41104		606102	58	060650	26	5452		6430	10
80	45978			52	032433	17	6311		5584	057
90	50752	73	578744	44	004212	11	7170	60	4738	50
0	55526		551392	36	976018	04	8030	59	3892	40
10	60299	74	496712	28	947823	95	8889	59	3045	30
20	65072		469384	20	919635	88	9749	50	2198	20
30	69846	73	442064	13	891495	74	0609	61	1351	10
40	74620		414751	05	863181	66	1470		0504	056
50	79394	74	387446	58	835115	58	2331	60	9656	50
60	84167		360148	90	806957	51	3191	61	8808	40
70	88940	73	332852	82	778806	44	4052	62	7960	30
80	93714		305576	75	750662	37	4914	62	7112	20
90	98487	74	278301	68	722525	30	5776		6264	10
0	17503261	73	251033	61	694395	23	6638		5415	055
10	08034		223772	53	666272	16	7500	63	4566	50
20	12807	74	196519	44	638156	06	8363	62	3717	40
30	17580		169275	36	610059	99	9225	63	2868	30
40	22353	73	142039	28	581951	91	0088		2018	20
50	27127		114811	20	553260	84	0951	64	1168	10
60	31900		087591		525776		1815		0318	054
70	36673									

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S.M.

M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
6 0	17536673		087591		525776	76	1815	63	50318	60
10	44446	73	060378	13	497700	280	22678	69	9468	50
20	46219		033173	05	469631	61	3542	864	8617	40
30	50991	72	005975	98	441569	55	4406	65	7766	30
40	55764	4773	978785	90	413514	48	5271	65	6919	20
50	60537	173	951602	83	385466	40	6136	66	6064	10
7 0	65310		924427	75	357426	33	7001	66	5213	52
10	70083	72	897259	68	329393	26	7866	66	4361	50
20	74855	73	870099	60	301367	18	8732	66	3509	40
30	79628	73	842946	53	273345	11	9597	65	2657	30
40	84401	72	815801	45	245338	04	10463	66	1804	20
50	89173	73	788663	38	217334	279	1319	67	0954	10
8 0	93946	72	761533	30	189337	97	2196	67	0099	53
10	98718	72	734411	22	161349	88	3062	66	9246	52
20	17603491	73	707297	14	133368	81	3928	67	8392	50
30	08263	72	680190	07	105394	74	4796	68	7539	40
40	13093	73	653090	00	077426	68	5664	68	6685	30
50	17808	72	625998	92	049467	59	6521	67	5831	20
9 0	22580	73	598914	84	021515	52	7399	68	4977	10
10	27352		571838	76	993571	44	8267	69	4122	51
20	32124	72	544769	69	965634	37	9135	69	3268	50
30	36897	73	517707	62	937704	30	0003	70	2413	40
40	41669	72	490653	54	909781	23	0872	69	1558	30
50	46441		463606	47	881865	16	1741	70	0702	20
10 0	51213		436567	39	853956	09	2611	70	9847	10
10	55985		409534	33	826054	02	3480	69	8991	50
20	60757		382509	25	798159	95	4350	70	8135	40
30	65529		355493	16	770273	86	5220	71	7278	30
40	70301		328485	08	742394	79	6091	71	6422	20
50	75072	71	301486	99	714525	69	6961	70	5565	10
11 0	79844	72	274493	87	686661	64	7832	71	4708	50
10	84616		247506	80	658804	57	8702	70	3851	40
20	89388	71	220526	73	630953	51	9573	71	2993	30
30	94159	72	193553	65	603109	44	10444	72	2135	20
40	98931	71	166588	57	575272	37	1316	72	1277	10
50	17703702	72	139631	50	547443	29	2188	73	0419	00
60	08474		112681		519620	23	3061		19563	048

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar. D.	Sinus D.	
13 0	17708474	71	1112681	169	41	171	3061	9841	60
10	13246	71	085740	32	171	1933	1933	8701	50
20	18017	71	058808	25	32	4806	4806	7843	40
30	22788	71	031883	16	25	5679	5679	6984	30
40	27560	71	004967	08	16	6552	6552	6125	20
50	32331	71	978059	01	08	7425	7425	5265	10
13 0	37102	72	951357	168	96	8299	8299	4405	047
10	41874	72	924261	89	96	9172	9172	3545	50
20	46645	72	897372	82	89	0046	0046	2685	40
30	51416	72	870490	74	82	0920	0920	1825	30
40	56187	72	843616	66	74	1795	1795	0964	20
50	60958	72	816750	59	66	2670	2670	0103	10
14 0	65729	73	789891	33	59	3546	3546	9242	61
10	70500	73	763038	45	33	4421	4421	8380	61
20	75271	73	736193	37	45	5296	5296	7519	62
30	80042	73	709356	29	37	6172	6172	6657	62
40	84813	73	682527	21	29	7048	7048	5795	63
50	89584	73	655706	13	21	7925	7925	4932	63
15 0	94355	70	628893	07	13	8801	8801	4070	63
10	99125	71	601086	00	07	9679	9679	3207	63
20	17803896	71	575286	92	00	0556	0556	2344	63
30	08667	70	548494	84	92	1434	1434	1484	64
40	13437	71	521710	77	84	2311	2311	0617	64
50	18208	71	494933	70	77	3189	3189	9753	64
16 0	22978	71	468163	63	70	4067	4067	8889	65
10	27749	70	441400	56	63	4945	4945	8025	65
20	32519	71	414644	48	56	5824	5824	7161	65
30	37290	70	387896	40	48	6702	6702	6296	66
40	42060	71	361156	32	40	7581	7581	5431	66
50	46830	71	334424	24	32	8460	8460	4566	66
17 0	51601	70	307700	18	24	9340	9340	3701	66
10	56371	71	280982	11	18	0219	0219	2835	66
20	61141	71	254271	04	11	1099	1099	1969	66
30	65912	71	227567	96	04	1979	1979	1103	67
40	70682	71	200871	88	96	2860	2860	0237	67
50	75451	71	174183	81	88	3741	3741	9372	67
60	80221	71	147503	73	81	4622	4622	8504	67

Grad. 79.

S.M.

Grad. 10.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
18 0	17880121	4770	147502	75	170	522880	4622	81	98504	60
10	84991		110827	67	170	495524	5503	82	7637	50
20	89165		094160	59	170	467775	6385	81	6770	40
30	94531		067501	52	170	440235	7266	80	5902	30
40	99301		040849	44	170	412701	8148	79	5035	20
50	17904071		014205	36	170	385175	9030	78	4167	10
9 0	08841	69	987569	30	170	357656	9913	83	3298	0
10	13611	69	960939	23	170	330144	0795	83	2430	40
20	18380	70	934316	15	170	302638	1678	84	1562	30
30	23150	70	907701	08	170	275140	2561	84	0693	20
40	27920	69	881093	00	170	247648	3445	83	9824	10
50	32689	70	854493	93	170	220165	4328	84	8954	0
20 0	37459	69	827900	87	170	192688	5212	85	8085	40
10	42228	70	801313	79	170	165217	6096	85	7215	30
20	46998	69	774734	72	170	137753	6981	84	6345	20
30	51767	70	748162	64	170	110297	7865	85	5475	10
40	56536	69	721598	56	170	082848	8750	86	4604	0
50	61306	69	695042	48	170	055407	9635	87	3734	40
21 0	66075		668494	41	170	027974	0520	88	2863	30
10	70844		641952	35	170	000547	1405	89	1992	20
20	75613		615417	28	170	973126	2291	90	1120	10
30	80382	70	588889	20	170	945712	3177	91	0249	0
40	85151	69	562369	14	170	918305	4064	92	9377	40
50	89921	69	535855	07	170	890904	4951	93	8505	30
22 0	94690		509348	00	170	863510	5838	94	7633	20
10	99459		482848	93	170	836123	6725	95	6760	10
20	18004228	68	456355	85	170	808743	7612	96	5887	0
30	08996	69	429870	76	170	781370	8500	97	5014	40
40	13765		403394	68	170	754007	9387	98	4141	30
50	18534		376926	61	170	726651	0275	99	3268	20
23 0	23303		350465	53	170	699301	1164	100	2394	10
10	28072	68	324010	48	170	671998	2052	101	1520	0
20	32840	69	297562	41	170	644622	2940	102	0646	40
30	37609	68	271121	33	170	617292	3829	103	9771	30
40	42377	69	244688	26	170	589970	4718	104	8897	20
50	47146		218202	19	170	562654	5608	105	8022	10
60	51915		191843		170	535345	6498		7147	0

Grad. 79.

[5.M.]

Grad. 10.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
14 0	18051915	63	171	13	169	274272	02	165	6498	89
10	56683			05	508043		98	165	7327	89
10	61451			05	480748		87	165	8277	89
30	86120	69		97	453461		80	166	9167	91
40	70988	68		89	426181		73	166	0058	91
50	75756	69		76	398908		68	166	0949	92
25 0	80525	4768		70	371640		67	1841	1892	92
10	85293			63	344378		54	2733	1015	91
10	90061			55	317124		47	3624	0138	92
30	94829			46	289877		38	4516	9261	93
40	99597			38	262639		30	5408	8384	93
50	18104365			32	235409		23	6300	7506	93
26 0	09133			26	208184		18	7193	6628	92
10	13901			19	180966		12	8085	5750	93
10	18669			12	153754		05	8978	4872	93
30	23437			04	126549		98	9873	3993	94
40	28205			96	099351		90	1065	3115	94
50	32973	67		88	072161		83	1165	2236	95
27 0	37740	68		83	044978		77	2553	1350	95
10	42508			76	017801		71	3447	0477	95
10	47276	67		69	990630		63	4342	9597	95
30	52043	68		61	963467		56	5236	8717	96
40	56811			54	936311		49	6131	7837	96
50	61579	67		46	909162		42	7026	6957	96
28 0	66346			40	882020		35	7922	6076	95
10	71113	68		33	854885		29	8817	5195	96
10	75881	67		25	827756		21	9713	4314	97
30	80648	68		18	800635		15	0609	3433	97
40	85416	67		11	773520		08	1506	2551	98
50	90183			04	746412		01	2403	1670	98
29 0	94950			98	719310		95	3301	0788	97
10	99717			91	692215		89	4198	9905	98
10	18204484			84	665126		83	5096	9023	97
30	09251	68		76	638045		74	5993	8140	98
40	14019	67		68	610971		66	6891	7257	99
50	18786			62	583905		61	7789	6374	99
60	23553				556844			8688	5491	

Grad. 79.

[S.M.]

Grad. 10.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
30°	1823553	66	145532	56	556844	170	8688	899	9812	50
10	28319		119376	48	529789	47	9587		4607	50
20	33086	4767	193228	41	501742	40	0486	169	3723	40
30	37853		167087	33	475702	32	1385	900	1839	30
40	42620		140954	26	448670	26	2284		2955	20
50	47387		114828	19	421644	19	3184		1070	10
31°	52154	66	088709	13	394625	13	4084		0186	84
10	56920		062596	06	367612	07	4984	9811	9301	80
20	61687	67	036490	98	340605	98	5885	01	8415	85
30	66453	66	010392	91	313607	93	6785	01	7530	86
40	71220	67	984301	83	286615	84	7686		6644	10
50	75986	169	958218	76	259631	77	8587		5755	10
32°	80753	67	932122	70	232654	72	9488		4872	028
10	85519	66	906072	63	205682	64	0390	02	3986	50
20	90286	67	880009	56	178718	58	1291	01	3095	40
30	95052	66	853953	48	151760	50	2193	02	2212	30
40	99818		827905	41	124810	44	3095	03	1325	10
50	18304585	67	801864	35	097866	38	3998		0438	10
33°	09351	66	775829	29	070928	32	4901	9810	9550	027
10	14117		749800	22	043996	26	5804		8662	50
20	18883		723778	14	017070	17	6708	04	7774	40
30	23659		697764	06	990153	10	7611	03	6886	30
40	28415		671758	99	963243	03	8515	04	5998	10
50	33181	169	645759	92	936340	96	9419		5109	10
34°	37947		619767	86	909444	91	0325	171	4220	026
10	42713		593781	79	882553	83	1228		3331	50
20	47479		567802	72	855670	77	2232	04	2442	40
30	52245	65	541830	64	828793	69	3037	05	1552	30
40	57010		515866	58	801924	64	3942	06	0662	20
50	61776	66	489908	51	775060	57	4848		9772	10
35°	66542	65	463957	45	748203	50	5754	9819	8882	91
10	71307	66	438012	38	721353	44	6655	06	7991	50
20	76073		412074	31	694509	37	7563		7100	40
30	80839	65	386143	23	667672	30	8471	07	6209	30
40	85604	66	360220	15	640842	22	9378		5318	20
50	90370	65	334305	08	614020	16	0225	171	4427	92
60	95133		308397		587204		1193	08	3535	02

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15.5.

Grad. 10.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
36 0	18395135	65	169	308397	167	587104	172	1193	907	60
10	99900	66	169	281494	96	560394	103	2100	921	50
10	18404666	65	169	256598	88	533591	96	3007	919	40
30	09431	65	169	230710	81	506795	89	3915	918	30
40	14196	66	169	204829	74	480096	83	4813	918	20
50	18961	65	169	178955	67	453223	76	5732	918	10
37 0	13727	65	169	153088	61	426447	69	6641	918	0 23
10	28491	66	169	127227	55	399678	64	7549	918	50
20	33257	65	169	101378	48	372914	57	8458	918	40
30	38022	65	169	079924	40	346157	50	9367	918	30
40	42787	66	169	049684	33	319407	43	0277	918	20
50	47552	65	169	023851	26	292664	37	1187	918	10
38 0	52317	65	169	998025	20	265927	30	2098	918	95
10	57082	66	169	971265	13	239197	23	3008	918	0 22
20	61846	65	169	946392	06	212474	17	3918	918	50
30	66611	65	169	920586	98	185757	09	4829	918	40
40	71376	66	169	894788	91	159048	03	5740	918	30
50	76141	65	169	868997	84	132345	96	6652	918	20
39 0	80905	65	169	843213	78	105649	89	7564	918	10
10	85670	66	169	817435	71	078960	83	8475	918	0 21
20	90435	65	169	791664	64	052177	76	9387	918	50
30	95199	65	169	765900	58	025601	70	0299	918	40
40	99963	66	169	740142	51	998930	64	1211	918	30
50	18504728	64	169	714391	43	972266	57	2125	918	20
40 0	09492	65	169	688648	37	945605	50	3039	918	10
10	14257	66	169	662911	30	918959	44	3951	918	0 20
20	19021	65	169	637181	23	892315	36	4866	918	50
30	23785	65	169	611458	16	865679	30	5779	918	40
40	28549	66	169	585742	09	839049	23	6693	918	30
50	33314	65	169	560033	02	812426	17	7607	918	20
41 0	38078	64	169	534331	96	785809	10	8521	918	10
10	42843	65	169	508635	88	759199	03	9436	918	0 19
20	47606	66	169	482947	82	732596	97	0351	918	50
30	52370	65	169	457265	75	705999	91	1266	918	40
40	57134	66	169	431590	68	679408	84	2182	918	30
50	61898	65	169	405922	62	652824	78	3098	918	20
60	66661	64	169	380260	56	626246	72	4014	918	10

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S.M.

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M.S.	Sinus.	D.	Logarith.	D.	Difference.	D.	Logar.	D.	Sinus.	D.
42 0	18566661	63	380160	56	1626246	72	4014	16	1279	60
10	71415	63	354604	56	599674	61	4930	17	0379	50
20	76189	64	318956	41	573109	57	5847	16	9475	40
30	80953	63	303315	35	546552	52	6763	16	8578	30
40	85717	64	277680	28	520000	45	7680	16	7677	20
50	90480	63	252052	21	493455	39	8592	18	6776	10
43 0	95244	64	226431	15	466916	32	9515	17	5875	017
10	18600007	63	200816	08	440384	26	10432	18	4975	50
20	04771	63	175208	00	413858	18	1350	19	4071	40
30	09534	64	149608	92	387340	10	2268	19	3169	30
40	14258	63	124016	85	360830	04	3186	19	2267	20
50	19061	63	098431	78	334326	97	4105	19	1364	10
44 0	23824	64	072353	72	307829	91	5024	20	0461	016
10	28538	63	047281	66	281338	86	5943	20	9558	50
20	33351	63	021715	60	254852	79	6863	19	8655	40
30	38124	64	996155	52	228373	72	7782	20	7752	30
40	42877	64	970603	46	201901	66	8701	20	6848	20
50	47341	63	945097	40	175435	60	9622	21	5944	10
45 0	52404	62	919512	33	148975	54	10542	21	5040	015
10	57167	63	891984	26	122521	46	1463	20	4135	50
20	61930	63	868458	20	094075	41	2383	21	3231	40
30	66695	62	842978	12	065634	33	3304	21	2326	30
40	71455	63	817426	05	043201	27	4225	22	1422	20
50	76218	63	791921	98	016774	20	5147	22	0513	10
46 0	80981	62	766423	91	990354	13	6069	23	9610	014
10	85744	63	740932	84	963941	06	6991	23	8704	50
20	90507	62	715448	78	937535	00	7913	24	7798	40
30	95269	63	689970	72	911135	95	8835	24	6892	30
40	18706032	63	664498	66	884740	89	9758	24	5985	20
50	04795	63	639232	60	858351	84	10681	24	5075	10
47 0	09558	62	613572	53	831967	76	1605	23	4172	01
10	14320	63	588119	45	805591	69	2528	24	3264	50
20	19081	63	561674	38	779222	62	3452	25	2357	40
30	23844	63	537236	32	752860	57	4376	25	1449	30
40	28607	62	511804	25	726503	49	5301	24	0542	20
50	33360	62	486379	17	700154	42	6225	25	9637	10
60	38131	62	460962		673812		7150	25	8725	011

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar. D.	Sinus.	D.
48 0	18738131	63	167	161	161	163	17150	98725	60
10	42894	63	435551	154	161	35	8074	7817	50
20	47656	63	410146	95	161	30	8999	6908	40
30	52418	63	384748	92	161	23	9914	5999	30
40	87180	63	359356	88	161	18	0850	5089	20
50	61942	63	333971	85	161	11	1776	4180	10
49 2	66704	63	308593	78	161	09	2703	3270	011
10	71466	63	283223	70	161	97	3630	2360	50
10	76228	63	257860	63	161	89	4556	1490	40
30	80990	63	232502	58	161	85	5483	0540	30
40	55752	63	207150	52	161	79	6410	9619	20
50	90514	63	181805	45	161	72	7337	8718	10
50 0	95275	61	156466	39	161	67	8265	7807	010
10	1880037	62	131135	31	161	58	9192	6896	50
10	04799	62	105810	25	161	53	0110	5984	40
30	09560	61	080492	18	161	46	1048	5072	30
40	14322	62	055180	12	161	41	1977	4160	20
50	19084	61	029875	05	161	34	2906	3248	10
51 0	23845	61	004576	99	161	29	3836	2336	09
10	28606	62	979284	92	161	21	4765	1422	50
20	33368	61	953999	85	161	14	5692	0510	40
30	38129	62	928721	78	161	08	6624	9597	30
40	42891	62	903449	72	161	02	7554	8683	20
50	47651	61	878184	65	161	96	8485	7770	10
52 0	52413	61	852926	58	161	89	9416	6856	08
10	57174	62	827674	52	161	82	0346	5942	50
20	61935	61	802428	46	161	77	1277	5027	40
30	66696	62	777189	39	161	70	2208	4123	30
40	71457	61	751957	32	161	64	3140	3198	20
50	76218	62	726732	25	161	57	4072	2283	10
53 0	80979	61	701513	19	161	52	5005	1368	07
10	85740	62	676301	12	161	44	5937	0452	50
20	90501	61	651095	06	161	38	6869	9536	40
30	95262	62	625896	99	161	32	7802	8610	30
40	18900023	60	600703	93	161	26	8735	7704	20
50	04784	60	575517	86	161	20	9669	6788	10
60	09544	60	550338	79	161	13	0603	5871	06

Grad. 79.

S.M.

Grad. 10.

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M. S.	Sinn.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinn.	D.
54	0	18909544	476116	550338	73	164	0603	33	9019871	60
10		14305	525165	73	703619	261	1536	33	4954	50
20		19066	499999	66	677519	00	1470	33	4037	40
30		23826	61	474849	59	651436	93	3404	3120	30
40		28587	60	449687	53	625348	88	4339	2201	18
50		33347	60	424541	46	599267	81	5274	1285	10
55	0	38108	61	399401	40	573192	75	6209	0367	18
10		42868	60	374168	33	547124	68	7144	9448	19
20		47628	61	349141	27	521061	63	8080	8530	18
30		52389	61	324021	20	495006	55	9015	7611	19
40		57149	50	298907	14	468956	50	9951	6692	30
50		61909	50	273800	07	442913	43	10887	5773	20
56	0	66669	61	248699	01	416876	37	1823	4854	10
10		71429	60	223605	94	390845	31	2760	3934	0 4
20		76189	60	198518	87	364822	23	3696	3014	50
30		80949	61	173437	81	338804	18	4633	2094	40
40		85709	60	148343	74	312793	11	5570	1174	30
50		90469	60	123266	67	286728	05	6508	0253	20
57	0	95229	59	098235	61	260789	99	7446	9332	10
10		99985	59	073181	54	234797	92	8384	8411	0 3
20		19004749	60	048135	48	208810	87	9323	7490	50
30		09509	60	023091	41	182830	80	10261	6568	40
40		14268	60	998055	36	156855	75	11200	5647	30
50		19028	60	973025	30	130886	69	2139	4723	20
58	0	23788	59	948002	23	104924	62	3078	3803	10
10		28547	60	922986	16	078969	55	4017	2880	0 1
20		33307	59	897976	10	053019	50	4957	1957	50
30		38066	60	872975	04	027075	44	5897	1035	40
40		42826	60	847976	96	001138	37	6838	0112	30
50		47585	59	822987	89	975208	30	7779	9182	20
59	0	52344	60	798004	83	949284	24	8720	8269	10
10		57104	59	773027	165	923366	18	9661	7341	0 1
20		61863	60	748057	77	897454	12	10603	6417	50
30		66622	60	723093	70	871545	05	1544	5493	40
40		71381	60	698136	64	845640	99	2486	4568	30
50		76140	60	673185	57	819557	93	3428	3643	20
60		80900	60	648241	51	795871	86	4370	2718	10
					44					0 0

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S. M.

Grad. 17.

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M. S.	Sinus.	D.	Logarith.	D.	Differens.	D.	Logar.	D.	Sinus.	D.
0	0	19080900	648241	38	793871	81	4370	43	1718	60
10	85659	623303	623303	38	767990	74	5313	42	1793	50
20	90418	598371	598371	38	742116	68	6255	41	0868	40
30	95177	573446	573446	38	716248	62	7198	40	9941	30
40	99935	548527	548527	38	690386	55	8141	39	9016	20
50	19104694	523615	523615	38	664531	49	9084	38	8090	10
0	0	09453	498719	38	638682	42	0018	44	7164	059
10	14212	473811	473811	38	612840	37	0971	43	6237	50
20	18971	448918	448918	38	587005	31	1915	44	5310	40
30	23729	424031	424031	38	561172	26	2859	45	4383	30
40	28488	399150	399150	38	535346	19	3804	46	3456	20
50	33247	374276	374276	38	509527	14	4749	47	2529	10
0	0	38005	349408	38	483713	07	5695	48	1604	058
10	42764	324546	324546	38	457900	02	6640	49	0673	50
20	47523	299690	299690	38	432104	94	7586	50	9745	40
30	52280	274842	274842	38	406310	88	8532	51	8810	30
40	57039	250000	250000	38	380522	82	9478	52	7888	20
50	61797	225165	225165	38	354740	76	0425	53	6959	10
0	0	66555	200336	38	328964	70	1371	54	6030	057
10	71314	175513	175513	38	303194	63	2315	55	5100	50
20	76072	150697	150697	38	277431	58	3266	56	4171	40
30	80830	125887	125887	38	251673	51	4214	57	3241	30
40	85588	101083	101083	38	225922	45	5161	58	2311	20
50	90346	076280	076280	38	200177	39	6109	59	1381	10
0	0	95104	051495	38	174438	33	7057	60	0450	056
10	99862	026710	026710	38	148705	28	8005	61	9520	50
20	19104620	001931	001931	38	122977	20	8954	62	8589	40
30	09378	077159	077159	38	097257	14	9902	63	7657	30
40	14136	052394	052394	38	071543	07	0851	64	6726	20
50	18893	027636	027636	38	045836	02	1800	65	5794	10
0	0	23651	002884	38	020134	95	2750	66	4862	055
10	28409	878138	878138	38	094439	90	3699	67	3930	50
20	33167	853398	853398	38	068749	83	4645	68	2998	40
30	37924	828665	828665	38	043066	78	5599	69	2065	30
40	42682	803938	803938	38	017388	71	6550	70	1133	20
50	47439	779218	779218	38	891717	67	7501	71	0200	10
60	52197	754503	754503	38	866050	62	8453	72	29266	054

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S.M.

M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6	0	19252197	754503	10	866050	61	8453	91	9266	60
10	56954	57	729793	162	840389	54	9404	912	8333	50
20	61721	58	705090	247	814735	48	0355	52	7399	40
30	66469	4757	680394	246	789087	41	1307	53	6465	30
40	71226	57	655705	89	765446	35	2259	53	5531	20
50	75983	57	610023	81	737811	28	3212	35	4597	10
7	0	80740	606348	75	712183	22	4165	52	3662	053
10	85498	58	581678	70	686561	17	5117	52	2727	50
20	90255	57	557014	64	660944	10	6070	53	1792	40
30	95012	57	532357	57	635334	05	7023	54	0857	30
40	99769	57	507706	51	609725	99	7977	54	9921	20
50	19304526	57	483061	45	584130	93	8931	54	8985	10
8	0	09283	458422	39	558537	87	9885	55	8049	053
10	14040	56	433789	33	532950	81	0839	55	7113	50
20	18796	57	409163	26	507369	74	1794	55	6177	40
30	23553	57	384543	20	481795	68	2748	54	5240	30
40	28319	56	359930	13	456227	62	3703	55	4303	20
50	33067	56	335323	07	430665	56	4658	56	3366	10
9	0	37823	310723	00	405109	50	5614	56	2428	38
10	42580	57	286129	94	379560	49	6560	55	1491	37
20	47336	56	261541	88	354016	44	7525	56	0553	30
30	52093	57	236959	82	328478	38	8481	57	9615	20
40	56849	56	212384	75	302946	32	9435	57	8676	10
50	61606	56	187815	69	277420	26	0395	58	7738	050
10	0	66362	163252	63	251900	20	1352	58	6799	50
10	71119	57	138695	57	226386	14	2309	58	5860	40
20	75875	56	114144	51	200877	09	3267	57	4921	30
30	80631	57	089600	44	175376	01	4224	58	3981	20
40	85387	56	065062	38	149880	96	5182	58	3042	10
50	90143	57	040531	31	124391	83	6140	59	2102	049
11	0	94900	016006	25	098908	78	7098	59	1161	50
10	99656	56	991487	19	073430	71	8057	58	0221	40
20	19404412	57	966974	13	047959	66	9015	59	9250	30
30	09168	55	942467	07	022493	59	9974	60	8339	20
40	13923	56	917967	00	997034	54	0933	60	7398	10
50	18679	56	893473	94	971580	48	1893	60	6457	048
60	23435	56	868985	88	946132	41	2853	60	5516	

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.	
12 0	19423435	56	868985	24	946132	41	1253	60	95516	94	60
10	28191	56	344503	76	910690	37	3813	61	4574	94	50
20	32947	55	810027	69	895253	19	4774	60	3632	43	40
30	37702	56	795588	63	869824	24	5734	961	2689	42	30
40	42458	55	771095	57	844400	18	6695	961	1747	43	20
50	47114	55	746638	50	818982	11	7656	961	10804	43	10
13 0	51969	56	722188	44	793571	06	8617	62	9861	44	047
10	56725	55	697744	38	768165	00	9579	62	8918	50	40
20	61480	56	673306	32	742765	94	0541	63	7975	44	30
30	66236	4755	648874	26	717371	89	1503	63	7031	30	20
40	70991	4755	624448	20	691982	82	2466	62	6087	20	10
50	75746	4755	600028	14	666600	77	3428	63	5143	10	046
14 0	80501	56	575614	08	641223	71	4391	64	4199	45	50
10	85257	55	551206	02	615852	66	5354	64	3254	40	40
20	90012	55	526804	95	590486	58	6318	63	2309	30	30
30	94767	4755	502409	88	565128	52	7281	64	1364	20	20
40	99522	4755	478021	82	539776	46	8245	64	0414	10	10
50	19504277	4755	453639	76	514430	40	9209	9807	9474	46	045
15 0	09032	4755	429263	70	489090	35	0173	65	8528	50	40
10	13787	4755	404893	64	463755	28	1138	64	7582	40	30
20	18542	4755	380529	58	438427	23	2102	65	6636	30	20
30	23297	4755	356171	52	413104	17	3067	66	5690	20	10
40	28052	4755	331819	45	387787	10	4032	66	4743	10	044
50	32807	4755	307474	39	362477	05	4997	66	3796	0	40
16 0	37561	55	283135	33	337172	98	5965	65	2845	48	30
10	42316	55	258802	27	311874	93	6928	66	1902	40	20
20	47071	54	234475	21	286581	87	7894	66	0954	30	10
30	51825	55	210154	15	261294	82	8860	67	0006	20	043
40	56580	54	185839	09	236012	76	9822	68	9058	10	30
50	61334	55	161530	02	210736	70	0794	68	8110	0	20
17 0	66089	54	137228	96	185466	63	1762	67	7162	49	10
10	70843	55	112932	90	160203	57	2729	68	6213	40	042
20	75597	55	088642	84	134946	52	3696	68	5264	30	30
30	80352	54	064358	77	109694	45	4664	69	4315	20	20
40	85106	55	040081	71	084449	40	5632	69	3365	10	10
50	89860	55	015810	66	059209	35	6601	69	2416	0	042
60	94614	55	299544	60	033974	30	7570	69	1466	0	042

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S.M.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinu.	D.
18 0	19594614		991544		161.160	27	7570	68	1466	60
10	99369	53	967285	142	008747	22	8538	50	0516	50
20	19604123	475	943032	53	983525	16	9107	969	9565	40
30	08877	+	918785	47	958309	12	0476	70	8615	30
40	13631		894543	41	933097	10	1446		7664	20
50	18385		870307	36	907891	06	2416		6713	10
				30		01		71		
19 0	23139		846077		882690	94	3387	70	5761	0 41
10	27892	53	821853	24	857496	88	4357		4811	50
20	31646	54	797635	18	832308	82	5327	71	3859	40
30	37400		773424	11	807126	76	6298		2907	30
40	42154		749219	05	781950	69	7269	72	1955	20
50	46907	53	725022	97	756781	63	8241	72	1002	10
		54		91						
20 0	51661		700831	85	731613	56	9213	71	0050	50
10	56415	53	676646	79	706462	51	0184	72	9097	40
20	61168	54	652467	73	681311	45	1156	9804	8144	30
30	65922		628294	68	656166	41	2128	73	7190	20
40	70675		604126	62	631025	35	3101		6237	10
50	75428	54	579964	57	605890	30	4074		5283	
21 0	80182	53	555807	51	580760	25	5047		4329	0 39
10	84935		531656	45	555635	18	6021	74	3375	50
20	89688		507511	38	530517	12	6994	73	2420	40
30	94441		483373	32	505405	06	7968	74	1466	30
40	99195	54	459241	25	480299	00	8942		0511	20
50	19703948	53	435116	18	455200	99	9916	75	9556	10
22 0	08701		410998	13	430107	93	0891	75	8600	0 38
10	13454		386885	07	405020	87	1865	74	7644	50
20	18207		362778	01	379938	82	2840	75	6689	40
30	22960		338677	96	354862	76	3815	76	5733	30
40	27713		314581	90	329790	72	4791		4776	20
50	32466	52	290491	84	304724	66	5767		3820	10
23 0	37218	53	266407	77	279664	60	6743		2863	0 37
10	41971		242330	71	254611	53	7719	77	1906	50
20	46724	52	218259	65	229563	48	8696	76	0949	40
30	51476		194194	59	204522	41				
40	56229	53	170135	53	179486	36	9672	77	9991	30
50	60982	52	146082	47	154456	30	0649	9502	9034	20
									8076	10
60	65734		122035		129431	25	1626	78	7117	0 36
							1604			

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S.M.

M.S	Sinus.	D. Logarith.	D. Different.	D.	Logar.	D. Sinus.	D.
24 0	19765734	53 122035	41 189431	18 12604	77 9801	7117	60
10	70487	53 097994	35 104413	18 3581	77 6159	58	50
20	75239	52 073959	35 079400	13 4559	77 5200	58	40
30	79991	53 049930	29 054393	07 5537	79 4242	58	30
40	84744	53 025907	23 029391	02 6516	79 3283	59	20
50	89496	4752 001890	17 004395	96 7495	79 2323	60	10
25 0	94248	53 977878	12 979404	91 8474	80 1364	59	035
10	99000	53 953871	06 954418	86 9454	80 6404	00	50
20	19803752	53 929873	99 929440	78 1000 0433	79 9444	00	40
30	08505	53 905880	93 904467	73 1413	80 8484	61	30
40	13257	53 881894	86 879508	65 2392	79 7523	60	20
50	18009	53 857914	80 854542	60 3372	80 6563	60	10
26 0	22761	51 833940	74 829588	54 4352	81 5602	61	034
10	27512	51 809972	68 804639	49 5333	81 4640	62	50
20	32264	51 786010	62 779697	42 6313	81 3679	61	40
30	37016	51 762053	57 754759	38 7294	81 2717	62	30
40	41768	51 738102	51 729827	32 8275	81 1756	63	20
50	46520	51 714156	46 704899	28 9257	81 0794	62	10
27 0	51271	51 690215	41 679976	23 0239	9800 9831	63	033
10	56023	51 666280	35 655059	17 1221	83 8869	62	50
20	60775	51 642351	29 630147	12 2204	82 7906	63	40
30	65526	51 618429	22 605243	04 3186	82 6943	63	30
40	70278	51 594514	15 580345	98 4165	83 5980	64	20
50	75029	51 570606	08 555454	91 5152	83 5016	64	10
28 0	79780	51 546704	02 530569	85 6135	84 4053	63	032
10	84532	51 522807	97 505688	81 7119	83 3089	64	50
20	89283	51 498916	91 480814	74 8102	83 2125	65	40
30	94034	51 475030	86 455744	70 9086	84 1160	65	30
40	98785	51 451150	80 431080	64 10070	85 0196	64	20
50	19903537	51 427276	74 406221	59 1055	85 9231	65	10
29 0	08288	51 403408	68 381568	53 2040	9799 8266	66	031
10	13039	51 379545	63 356520	48 3025	86 7300	66	50
20	17790	51 355688	57 331677	43 4011	86 6335	65	40
30	22541	51 331837	51 306841	36 4996	86 5369	66	30
40	27292	51 307993	44 282011	30 5982	86 4405	67	20
50	32043	50 284156	37 257188	23 6968	86 3442	67	10
60	36793	50 260325	31 232371	17 7954	86 2470	67	030

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
36 0	10107792	160	406177	16	1341654	11	3623	95	7525	60
10	12541	4749	381661	10	318043	06	24618	96	6550	50
20	17190		359051	04	293437	99	5614	95	5575	40
30	22039		335447	98	268838	94	6609	96	4600	30
40	26788		311849	92	244244	88	7605	96	3614	20
50	31537		288257	86	219656	83	8601	97	2648	10
37 0	36286		264671	79	195073	75	9598	96	1672	023
10	41035		241092	74	170498	71	9594	97	0695	50
20	45784	48	217518	69	145927	66	1591	97	9719	40
30	50532	49	193949	63	121361	61	2588	98	8742	30
40	55281		170386	58	096800	56	3586		7765	20
50	60030	48	146828	53	072244	51	4584		6788	10
38 0	64778	49	123275	48	047693	46	5584		5810	021
10	69527	48	099727	42	023147	41	6580	99	4832	50
20	74275	49	076185	36	998606	34	7579	98	3854	40
30	79024	48	052649	30	974072	29	8577	99	2876	30
40	83772		029119	23	949543	22	9576		1898	20
50	88520	49	005596	17	925021	16	0575	1000	0919	10
39 0	93265	48	982075	11	900505	11	1574	1000	9940	021
10	98017	159	958568	04	875994	04	2574		8961	50
20	1020276		935064	98	851490	98	3574		7982	40
30	07513		911566	92	826992	93	4574	01	7002	30
40	12261		888074	86	802459	87	5575		6022	20
50	17009		864588	80	778012	81	6576		5042	10
40 0	21757		841108	75	753531	76	7577		4062	020
10	26505		817633	70	729055	72	8578	01	3082	50
20	31253		794163	65	704583	66	9580	01	2101	40
30	36001		770698	60	680117	62	0581	02	2110	30
40	40749		747238	55	655655	57	1583		0135	20
50	45497	47	723783	50	631198	53	2585	03	9792	10
41 0	50244	48	700373	44	606745	46	3588	01	8176	010
10	54982		676889	38	582299	41	4590	03	7194	50
20	59740	47	653451	31	557858	34	5593		6212	40
30	64487	48	630020	25	533424	29	6596	04	5219	30
40	69235	47	606595	18	508995	22	7600		4247	20
50	73982	48	583177	11	484573	16	8604		3264	10
60	78730		559765		460157		9608		2281	018

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M.S	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
30 0	19936793	4751	161	26	232371	13	7954	87	1470	66
10	41544			20	207558	06	8941	86	1504	50
10	46295			14	182752	01	9927	87	0537	40
30	51046	50		09	157951	96	0914	88	9570	30
40	55796	51		04	133155	92	1901		8602	20
50	60547	50		98	108363	86	2889		7635	10
31 0	65297	51		237	083577	80	3877		6667	029
10	70048	50		86	058797	74	4865		5699	50
10	74798	51		79	034023	67	5853		4731	40
30	79549	50		73	009256	62	6841	89	3761	30
40	84299	51		66	984494	55	7830		2793	20
50	89050	50		60	959739	49	8819		1824	10
32 0	93800	460		55	934990	45	9808	90	0855	028
10	98550			50	910245	39	0798	89	9886	50
10	10003300			44	885506	34	1787	90	8916	40
30	08050			38	860772	28	2777		7946	30
40	12800			33	836044	24	3767	91	6976	20
50	17550			27	811320	18	4758		6006	10
33 0	22300			21	786602	11	5749	90	5035	027
10	27050			15	761891	06	6739	91	4064	50
10	31800			09	737185	00	7730		3093	40
30	36550			03	712485	95	8721	92	2122	30
40	41300			97	687790	89	9713		1150	20
50	46050	49		91	663101	84	0705	93	0179	10
34 0	50799	50		86	638417	78	1698	92	9207	026
10	55549			79	613739	72	2690	93	8234	50
20	60299	49		73	589067	65	3683	92	7262	40
30	65048	50		67	564402	60	4675	93	6289	30
40	69798	49		61	539742	54	5668		5316	20
50	74547	50		56	515088	50	6661	94	4343	10
35 0	79297	49		50	490438	44	7655		3370	025
10	84046			44	465794	39	8649	95	2396	50
10	88795	50		39	441155	33	9644	94	1422	40
30	93545	49		33	416522	28	0638	95	0448	30
40	98294			28	391894	23	1633		9474	20
50	10103043			22	367271	17	2628		8500	10
60	07791				342654		3623		7525	024

Grad. 70.

S.M.

Grad. 11.

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Alt. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
42 0	10278730	47	559765	07	460157	11	99608	04	2281	60
10	83477	59	536358	02	459746	07	0612	05	1298	50
20	88124	48	511339	96	411339	00	01617	05	0314	40
30	92972	47	489560	91	386939	96	2611	04	9331	30
40	97719	47	466169	85	361543	90	3626	05	8347	20
50	10302466	47	442784	80	338153	86	4631	06	7362	10
43 0	07213	47	419404	73	313767	78	5637	05	6378	017
10	11960	68	396031	68	289359	74	6642	06	5393	50
20	16707	63	371663	63	265015	69	7648	06	4408	40
30	21454	57	349300	57	240646	64	8654	07	3423	30
40	26201	51	321943	51	216282	57	9661	06	2433	20
50	30948	46	302592	46	191925	53	0667	07	1453	10
44 0	35695	46	279246	40	167572	46	1674	06	0467	016
10	40442	35	255906	35	143226	42	2680	07	9484	50
20	45189	29	232571	29	118884	36	3687	08	8495	40
30	49935	23	209242	23	094548	31	4694	08	7508	30
40	54682	17	185919	17	070217	25	5702	09	6521	20
50	59429	11	162602	11	045892	20	6710	09	5534	10
45 0	64171	05	139291	05	021572	13	7719	08	4547	015
10	68922	99	115986	99	997259	08	8727	09	3560	50
20	73668	93	092687	93	973951	01	9736	09	2572	40
30	78415	88	069394	88	948649	98	0745	10	1584	30
40	83161	82	046106	82	924351	91	1755	09	0596	20
50	87907	76	022824	76	900060	86	2764	10	9608	10
46 0	92654	70	999548	70	875774	80	3774	11	8619	014
10	97400	65	976278	65	851494	76	4784	11	7631	50
20	1040146	60	953013	60	827218	70	5795	10	6642	40
30	06892	55	929753	55	802948	66	6805	11	5653	30
40	11638	50	906498	50	778682	61	7816	11	4663	20
50	16384	45	883248	45	754421	56	8827	12	3673	10
47 0	21130	39	860003	39	730165	51	9838	12	2683	013
10	25876	34	835764	34	705914	45	0850	11	1693	50
20	30622	27	811530	27	681665	39	1861	12	0703	40
30	35368	20	790303	20	657430	32	2873	13	9712	30
40	40114	14	767083	14	633198	27	3885	13	8721	20
50	44859	08	743809	08	608971	21	4898	13	7730	10
60	49605		720661		584750		5911		6739	012

Grad. 78.

S.A.

Grad. 11.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
48 0	10449605	46	720661	204	584750	17	5911	13	6739	60
10	54351	45	697457	98	560533	11	6924	13	5747	50
20	59096	45	674259	93	536312	97	7937	14	4756	40
30	63842	46	651066	87	512115	00	8951	13	3764	30
40	68588	45	627879	82	487915	96	9964	13	2771	20
50	73333	45	604697	76	463719	90	0978	101	1779	10
49 0	78078	46	581521	70	439529	84	1992	4	0736	00
10	82824	47	558351	64	415345	79	3006	15	9793	50
20	87569	47	535187	59	391166	73	4021	14	8800	40
30	92314	46	512025	53	366993	68	5035	15	7805	30
40	97059	45	488875	48	342825	63	6050	15	6813	20
50	10501805	45	465727	42	318662	58	7065	16	5819	10
50 0	06550	45	442585	37	294504	52	8081	15	4825	00
10	11295	46	419448	31	270352	47	9096	16	3831	50
20	16040	45	396317	26	246105	42	0112	16	2836	40
30	20781	46	373191	20	222063	37	1128	17	1842	30
40	25530	45	350071	14	197926	31	2145	17	0847	20
50	30275	44	326957	08	173795	25	3162	17	9851	10
51 0	35020	44	303845	0	149670	19	4179	18	8856	00
10	39764	45	280747	9	125551	15	5196	18	7860	50
20	44505	45	257650	9	101435	09	6214	17	6864	40
30	49254	44	234558	8	077325	04	7231	17	5868	30
40	53999	44	211472	81	053223	94	8249	17	4874	20
50	58743	45	188391	76	029122	95	9267	1	3875	10
52 0	63488	44	165315	70	00502	88	0286	18	2878	00
10	68232	45	142245	64	98094	83	1304	15	1881	50
20	72977	44	119181	59	956853	78	2323	10	0884	40
30	77721	45	096122	53	932780	73	3342	20	9887	30
40	82465	45	073069	48	908705	68	4362	21	8889	20
50	87210	44	050021	43	884639	64	5382	21	7891	10
53 0	91954	45	026978	37	860575	57	6403	20	6893	00
10	96698	45	003941	31	836518	51	7423	21	5894	50
20	10601442	45	980910	26	812467	47	8443	21	4895	40
30	06186	45	957884	20	788420	41	9464	22	3896	30
40	10931	44	934864	14	764379	36	0485	22	2897	20
50	15675	44	911850	08	740343	30	1507	22	1898	10
6	20419	44	888842		716313		2529		0899	00

Grad. 78.

S.M.

Q

M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
54 0	10610419	43	288842	23029	155	716313	2529	22	50899	60
10	25162	43	865839	03	155	692288	3551	22	9899	50
20	29906	43	842841	98	20	668268	4573	23	8899	40
30	34650	43	819849	92	15	644253	5596	23	7898	30
40	39394	43	796862	87	09	620244	6618	23	6898	20
50	44138	43	773881	81	04	596240	7641	23	5897	10
55 0	48881	43	750905	76	99	572241	8664	24	4896	05
10	53625	44	727935	70	94	548247	9686	23	3895	50
20	58369	43	704970	65	88	524259	0711	23	2894	40
30	63112	44	682011	59	83	500276	1735	1024	1892	30
40	67856	43	659057	54	78	476298	2759	24	0890	20
50	72599	43	636109	48	72	452326	3783	25	9888	10
56 0	77342	44	613166	43	68	428358	4808	25	8885	03
10	82086	44	590229	37	61	404397	5832	24	7883	02
20	86829	43	567297	32	57	380440	6857	25	6880	03
30	91572	44	544370	27	52	356488	7882	26	5877	30
40	96315	44	521449	21	47	332541	8908	26	4874	20
50	10701059	43	498534	15	41	308600	9934	27	3870	10
57 0	05802	43	475624	10	37	284663	0961	27	2867	03
10	10545	43	452720	04	30	260733	1987	26	1863	04
20	15288	43	429821	99	25	236808	3013	25	0858	05
30	20031	43	406928	93	20	212888	4040	27	9854	04
40	24774	43	384040	88	15	188973	5067	28	8849	05
50	29516	43	361158	82	10	165063	6095	28	7844	10
58 0	34259	43	338281	77	05	141158	7123	29	6839	02
10	39002	43	315410	71	99	117255	8151	28	5834	50
20	43745	43	292544	66	94	093365	9175	29	4828	40
30	48487	43	269683	61	90	069475	0208	29	3823	06
40	53230	43	246828	55	83	045592	1236	28	2817	06
50	57973	43	223978	50	79	021713	2265	29	1810	07
59 0	62715	43	201133	45	74	997839	3294	30	0804	06
10	67458	43	178294	39	68	973971	4323	30	9797	07
20	72200	43	155461	33	63	950108	5353	29	8790	40
30	76942	43	132633	28	57	926251	6382	30	7783	30
40	81685	43	109811	22	52	902399	7412	30	6776	20
50	86427	43	086994	17	47	878552	8442	31	5768	10
60	91169	43	064182	12	43	854709	9473	31	4760	00

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar	D.	Sinus.	D.		
0	0	20791169	4742	157	064182	116	854709	36	09473	30	4760	60
10	95911				041376	00	830873	30	0503	30	3752	50
20	20800653				018576	00	807043	26	1533	31	1744	40
30	05395				995781	95	783217	20	2564	31	1735	30
40	10137				972992	89	759397	16	3595	1032	0726	20
50	14879				950108	84	735581	11	4627	9780	9717	10
1	0	19621			927429	79	711770	05	5659		8708	059
10	24363				904656	73	687965	00	6691		7699	50
20	29105				881888	68	664165	96	7723		6689	40
30	33847				859125	63	640369	317	8756	33	5679	30
40	38589				836368	57	616580	89	9788	32	4669	20
50	43330				813617	51	592796	84	0821	33	3658	10
2	0	48072			790871	46	569017	79	1854	33	2648	058
10	52813				768130	41	545242	75	2888	34	1637	50
20	57555				745394	36	521473	65	3921	33	0626	40
30	62296				722663	31	497708	59	4955	34	9614	30
40	67038				699038	25	473945	53	5989	33	8603	20
50	71779				677215	19	450196	49	7023	34	7591	10
3	0	76521			654505	14	426447	43	8058	35	6579	057
10	81262				631796	05	402704	39	9092	14	5567	50
20	86003				609092	04	378965	33	0127	35	4554	40
30	90744				586394	98	355232	28	1161	36	3547	30
40	95485				563702	92	331504	23	2198	37	2529	20
50	10900227				541015	87	307781	19	3234	37	1516	10
4	0	04968			518333	82	284062	13	4271	37	0502	056
10	09709				495656	77	260349	08	5307	36	9485	50
20	14450				472985	71	236641	03	6344	37	8475	40
30	19190				450319	66	212938	97	7381	37	7461	30
40	23931				427659	60	189241	92	8418	38	6446	20
50	28672				405004	55	165549	88	9455	38	5432	10
5	0	33413			382354	50	141861	82	0493	39	4417	055
10	38154				359710	44	118179	78	1581	39	3402	50
20	42894				337071	39	094501	72	2570	38	2387	40
30	47635				314437	34	070829	67	3608	39	1371	30
40	52375				291809	28	047162	62	4547	39	0356	20
50	57116				269186	23	023500	56	5686	38	9340	10
60	61856				246569	17	3999844		6725	9777	8324	054

Grad. 77.

S.M.

Grad. 12.

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f. S	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.	
0	20961856	41	246569	11	999844	236	6725	40	8324	17	60
10	66597	40	223957	12	976192	236	7765	39	7307	16	50
20	71337	40	201350	07	952546	42	8804	40	6291	40	
30	76077	41	178748	01	928904	36	9844	40	5174	30	
40	80818	41	156152	96	905268	31	0884	215	4257	20	
50	85558	4740	133562	90	881637	26	1925	1041	3240	10	
0	90298	4740	110977	85	858011	21	2966	42	2222	18	053
10	95038	4740	088397	80	834390	17	4007	41	1204	50	
20	99778	4740	065822	75	810773	11	5049	41	0186	40	
30	21004518	4740	043252	70	787162	06	6090	41	9168	30	
40	07158	4740	020688	64	763556	00	7132	41	8150	20	
50	13998	4740	998130	58	739951	236	8174	41	7131	10	
0	18738	39	975577	53	716361	91	9216	43	6112	052	
10	23478	39	953029	48	692770	85	0259	43	5093	50	
20	28217	40	930486	43	669185	81	1391	43	4074	40	
30	32957	39	907948	38	645604	74	2340	43	3054	30	
40	37696	40	885417	31	622030	70	3387	44	2034	20	
50	42436	39	862891	26	598460	65	4431	44	1014	10	
0	47176	39	840370	21	574895	60	5475	45	9994	051	
10	51915	40	817854	16	551335	56	6519	45	8973	50	
20	56655	39	795343	11	527779	50	7564	45	7953	40	
30	61394	40	772837	06	504225	44	8608	45	6932	30	
40	66134	39	750337	00	480684	40	9657	45	5910	20	
50	70873	40	727842	95	457144	34	0698	217	4889	10	
0	75612	40	705353	89	433610	30	1742	46	3867	050	
10	80351	39	682866	84	410080	24	2785	46	2845	50	
20	85091	39	660390	79	386556	20	3834	46	1823	40	
30	89830	38	637916	74	363036	15	4880	46	0801	30	
40	94569	39	615447	68	339521	10	5926	47	9778	20	
50	99308	38	592983	64	316011	05	6972	47	8755	10	
0	21104047	38	570525	58	292506	98	8015	47	7732	045	
10	08786	39	548073	52	269008	94	9065	47	6709	50	
20	13525	39	525526	47	245514	89	0117	48	5686	40	
30	18264	38	503174	42	222025	85	1157	48	4662	30	
40	23002	39	480747	37	198540	79	2207	49	3638	20	
50	27741	38	458316	31	175061	75	3255	49	2614	10	
60	32480	38	435890	26	151586		4304		1589	04	

Grad. 77

18 M.

Grad. 12.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	I
12 0	11132480	58	155	155	155	155	155	155	155	155
10	37218	39	155	155	155	155	155	155	155	155
20	41957	58	155	155	155	155	155	155	155	155
30	46695	39	155	155	155	155	155	155	155	155
40	51434	38	155	155	155	155	155	155	155	155
50	56172	39	155	155	155	155	155	155	155	155
13 0	60911	4738	155	155	155	155	155	155	155	155
10	65649	39	155	155	155	155	155	155	155	155
20	70387	38	155	155	155	155	155	155	155	155
30	75125	39	155	155	155	155	155	155	155	155
40	79864	38	155	155	155	155	155	155	155	155
50	84602	39	155	155	155	155	155	155	155	155
14 0	89340	167184	155	155	155	155	155	155	155	155
10	94078	144826	155	155	155	155	155	155	155	155
20	98816	122473	155	155	155	155	155	155	155	155
30	1030554	100125	155	155	155	155	155	155	155	155
40	08291	077783	155	155	155	155	155	155	155	155
50	13030	055447	155	155	155	155	155	155	155	155
15 0	17767	033116	155	155	155	155	155	155	155	155
10	22505	010790	155	155	155	155	155	155	155	155
20	27243	988469	155	155	155	155	155	155	155	155
30	31980	966153	155	155	155	155	155	155	155	155
40	36718	943841	155	155	155	155	155	155	155	155
50	41455	921531	155	155	155	155	155	155	155	155
16 0	46193	899235	155	155	155	155	155	155	155	155
10	50930	876940	155	155	155	155	155	155	155	155
20	55668	854650	155	155	155	155	155	155	155	155
30	60405	832365	155	155	155	155	155	155	155	155
40	65142	810081	155	155	155	155	155	155	155	155
50	69879	787810	155	155	155	155	155	155	155	155
17 0	74617	765541	155	155	155	155	155	155	155	155
10	79354	743277	155	155	155	155	155	155	155	155
20	84091	721019	155	155	155	155	155	155	155	155
30	88828	698766	155	155	155	155	155	155	155	155
40	93565	676518	155	155	155	155	155	155	155	155
50	98302	654274	155	155	155	155	155	155	155	155
60	10303039	632035	155	155	155	155	155	155	155	155

Grad. 77.

J.M.

Grad. 12.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinu.	D.
18 0	11303039	36	632035	212	309837	90	2198	57	4557	60
10	07775	36	609803	212	286547	86	3255	58	3524	50
20	12512	4737	587574	23	263261	80	4313	57	2491	40
30	17249	37	565351	17	239981	75	5370	57	1458	30
40	21986	36	543134	11	216706	69	6428	58	0424	20
50	26722	37	520923	06	193437	64	7486	57	9391	10
19 0	31459	36	498717	01	170173	60	8544	59	8357	04
10	36195	37	476516	96	146913	54	9603	58	7322	50
20	40932	36	454320	91	123659	50	0661	59	6188	40
30	45668	37	432129	87	100409	46	1720	59	5253	30
40	50405	36	409942	82	077463	42	2779	60	4218	20
50	55141	37	387760	77	053921	38	3839	61	3183	10
20 0	59877	36	365583	71	030683	34	4900	60	2147	04
10	64613	37	343412	66	007452	27	5960	61	1112	50
20	69350	36	321246	61	984225	21	7021	60	0076	40
30	74086	37	299085	56	961004	17	8081	61	9040	30
40	78822	36	276929	51	937787	12	9142	61	8003	20
50	83558	37	254778	45	914575	07	0203	62	6967	10
21 0	88294	35	232633	40	891368	01	1265	61	5930	03
10	93030	36	210493	35	868167	97	2326	62	4893	50
20	97766	37	188358	30	844970	91	3388	63	3856	40
30	11403501	36	166228	25	821778	85	4450	63	2818	30
40	07237	37	144103	20	798590	83	5513	64	1780	20
50	11973	36	121983	15	775407	78	6576	64	0742	10
22 0	16709	35	099868	10	752229	73	7639	64	9704	03
10	21444	36	077758	05	729056	69	8702	64	8666	50
20	26180	35	055653	00	705887	63	9766	63	7627	40
30	30915	36	033553	94	682724	58	0829	64	6588	30
40	35651	35	011459	89	659566	53	1893	64	5549	20
50	40386	36	989370	83	636413	48	2957	65	4510	10
23 0	45122	35	967287	78	613265	42	4022	64	3470	03
10	49857	36	945209	73	590123	38	5086	65	2430	50
20	54592	35	923136	68	566985	33	6151	65	1390	40
30	59327	36	901068	63	543852	29	7216	66	0350	30
40	64063	35	879005	58	520723	23	8282	65	9310	20
50	68798	36	856947	54	497600	20	9347	66	8269	10
60	73533	35	834893	49	474480	16	0413	66	7228	03

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Grad. 12.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinu.	D.
24 0	11473533		834893	48	474480	13	0413	65	7228	60
10	78268	4715	812845	43	451367	09	1478	66	6187	50
20	83003		790802	37	428258	03	2544		5145	40
30	87718	34	768765	32	405155	99	3610	67	4104	30
40	92472	35	746733	27	382056	94	4677		3062	20
50	97207		724706	22	358962	90	5744	68	2020	10
25 0	11501942		702684	17	335872	84	6812	67	0977	035
10	06677	34	680667	12	312788	80	7879	68	9935	50
20	11411	35	658655	07	289708	75	8947	69	8892	40
30	16146		636648	03	266633	71	0015		7849	30
40	20881	34	614645	98	243561	66	1084	68	6806	20
50	25615	35	592647	93	220495	62	2152	69	5762	10
26 0	30350		570654	88	197433	57	3221		4718	034
10	35084	34	548666	83	174376	53	4290	70	3674	50
20	39818		526683	78	151323	47	5360	69	2630	40
30	44552	35	504705	72	128276	42	6429	1070	1586	30
40	49287	34	482733	66	105234	36	7499		0541	20
50	54021		460767	61	082198	31	8569	71	9496	10
27 0	58755		438806	56	059167	27	9639		8451	033
10	63489		416850	51	036140	21	0710	70	7406	50
20	68223		394899	46	013119	17	1780	71	6361	40
30	72957	35	372953	41	990102	12	2851		5315	30
40	77691	34	351012	37	0967090	09	3922	72	4269	20
50	82425		329075	32	944081	04	4994		3222	10
28 0	87159		307143	27	921077	99	6066		2176	032
10	91893	33	285216	21	898078	94	7138	73	1129	50
20	96627		263295	16	875084	88	8211		0082	40
30	11601360	34	241379	11	852096	84	9283	72	9035	30
40	06094		219468	06	829112	78	0356	72	7988	20
50	10828	33	197562	01	806134	73	1428	73	6940	10
29 0	15561		175661	96	783160	70	2501	74	5892	031
10	20295	33	153765	91	760190	64	3575	73	4844	50
20	25028	34	131874	86	737226	60	4648	74	3796	40
30	29762	33	109988	81	714266	55	5722		2748	30
40	34495		088107	76	691311	50	6796		1699	20
50	39228		066231	72	668361	47	7870	75	0650	10
30	43961		044359		685414		8945		29601	030

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S.M.

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M. S.	Sinus.	D.	Logarithm.	D.	Different.	D.	Logar	D.	Sinus.	D.
30 0	21643961	34	153 044359	218 66	150 645414	219 40	98945	74	9601	60
10	48695	4733	012493	61	612474	36	0019	75	8551	50
20	53428	151	000632	56	599538	31	1094	76	7502	40
30	58161	32	978776	51	576607	27	2169	77	6452	30
40	62894	33	956925	45	553680	21	3245	76	5402	20
50	67627	32	935080	40	530759	17	4321	77	4351	10
31 0	72360	32	913240	36	507842	12	5398	76	3301	029
10	77093	33	891404	31	484930	08	6474	76	2250	50
20	81826	32	869573	26	461022	03	7551	1077	1199	40
30	86558	33	847747	21	439119	218 98	8628	78	0147	30
40	91291	32	825926	15	416121	93	9705	78	9096	20
50	96024	32	804111	10	393328	87	0783	77	8044	10
32 0	21700756	33	782301	05	370441	83	1860	78	6992	028
10	05489	32	760496	00	347558	78	2938	78	5940	50
20	10221	33	738695	95	324680	74	4016	79	4888	40
30	14954	32	716901	217 91	301806	69	5095	79	3835	30
40	19684	33	695110	87	278937	66	6173	78	2782	20
50	24414	32	673323	82	256071	61	7252	79	1729	10
33 0	29151	33	651541	76	233210	56	8331	80	0676	027
10	33883	32	629765	71	210354	50	9411	79	9622	50
20	38616	33	607994	66	187504	46	0490	80	8568	40
30	43348	32	586228	61	164658	41	1570	80	7514	30
40	48080	33	564467	56	141847	36	2650	81	6460	20
50	52812	32	542711	51	118981	31	3730	81	5405	10
34 0	57544	31	520960	46	096149	26	4811	80	4351	026
10	62276	32	499214	41	073323	21	5891	81	3296	50
20	67008	33	477473	36	050501	17	6972	82	2241	40
30	71740	32	455737	31	027684	13	8053	82	1185	30
40	76471	33	434006	26	004871	08	9135	83	0130	20
50	81203	32	412280	22	982063	05	0217	83	9074	10
35 0	85935	31	390558	16	959258	227 98	1300	82	8018	025
10	90667	32	368842	11	936460	94	2382	83	6961	50
20	95398	33	347131	06	913666	89	3465	84	5905	40
30	21800130	32	325425	01	890877	84	4548	84	4848	30
40	04861	33	303724	216 96	868093	80	5631	85	3791	20
50	09593	32	282028	93	845323	76	6715	83	2734	10
60	14324	31	260335	822537	822537	7798	7798	84	1676	24

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
36 0	21814324	31	260335	87	822537	71	7798	1084	1676	60
10	19055	31	238648	81	799766	66	8882	9759-9788	0618	50
20	23787	32	216966	77	777000	61	9966	85	9560	40
30	28518	4731	195289	72	754238	56	1051	84	8502	30
40	33249	1	173617	67	731482	52	2135	85	7444	20
50	37980		151950	63	708730	47	3220		6385	10
37 0	42711		130288	57	685983	42	4305		5326	023
10	47442		108631	52	663241	38	5390	86	4267	50
20	52173		086979	47	640503	33	6476	85	3208	40
30	56904		065332	41	617771	28	7561	86	2149	60
40	61635		043690	37	595043	23	8647		1089	20
50	66366		022053	33	572320	20	9733	87	0029	10
38 0	71097		000420	28	549600	14	0820	86	8969	022
10	75828	151	978792	23	526886	10	1906	87	7908	50
20	80558	20	957169	18	504176	05	2993		6847	40
30	85289	31	935551	13	481471	01	4080	88	5786	30
40	90020	30	913938	09	458770	97	5168		4725	20
50	94750	31	892329	04	436073	92	6256		3664	10
39 0	99481	30	870725	99	413381	87	7344		2602	62
10	11904211	215	849126	94	390694	83	8432	89	1541	61
20	08941	31	827532	89	368011	77	9521	88	0479	62
30	13672	30	805943	83	345334	72	0609	89	9416	63
40	18402		784360	78	322662	67	1698	90	8354	62
50	23132		762782	73	299995	63	2787	91	7291	63
40 0	27862	31	741209	68	277332	58	3877	90	6228	020
10	32593	30	719641	63	254674	52	4967	89	5165	50
20	37323		698078	59	232022	49	6056	90	4101	64
30	42053		676519	54	209373	45	7146	91	3038	63
40	46783		654965	50	186728	41	8337		1974	64
50	51513		633415	45	164087	36	9328		0910	65
41 0	56243	19	611870	40	141451	31	0419	9755	9845	019
10	60972	30	590330	35	118820	27	1510	92	8781	64
20	65702		568795	30	096192	21	2602	91	7716	65
30	70432	29	547265	25	073372	17	3693	92	6651	30
40	75161	30	525740	19	050955	11	4785		5586	20
50	79891	29	504221	15	028344	08	5877	93	4520	66
60	84620		482706		005736		6970		3454	018

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S. M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
42 0	11984620	30	482706	215	10	602	6970	92	3454	60
10	89350	29	461196	148	10	247	8062	93	2388	50
20	94079	30	439691	01	05	225	9155	94	1321	40
30	98809	29	418190	96	01	94	0248	1094	0256	30
40	12003538	29	396694	91	96	90	1342	97	9189	20
50	03267	30	375203	87	91	85	2436	98	8122	10
43 0	12997	47	353716	82	87	81	3530	99	7055	017
10	17726	29	332234	77	82	76	4624	95	5988	50
20	22455	28	310757	71	77	72	5719	94	4920	40
30	27184	29	289286	67	71	65	6813	95	3852	30
40	31913	28	267819	62	67	62	7908	96	2784	20
50	36642	28	246357	57	62	57	9003	97	1716	10
44 0	41371	28	224900	52	57	53	0099	98	0648	016
10	46100	29	203448	47	52	47	1194	99	9579	50
20	50829	28	182001	43	47	39	2290	96	8510	40
30	55557	29	160558	38	43	35	3386	97	7441	30
40	60286	28	139120	33	38	30	4483	98	6372	20
50	65015	28	117687	29	33	26	5580	99	5302	10
45 0	69743	29	096258	23	29	20	6677	97	4232	015
10	74472	28	074835	18	23	16	7774	98	3162	50
20	79201	28	053417	14	18	11	8872	99	2092	40
30	83929	29	032003	09	14	07	9965	97	1021	30
40	88657	28	010594	04	09	02	1067	98	9950	20
50	93386	28	989190	01	04	00	2165	99	8879	10
46 0	98114	29	967791	94	01	92	3264	98	7808	014
10	12102842	28	946397	89	94	88	4362	99	6737	50
20	07571	28	925008	84	89	83	5461	97	5665	40
30	12199	29	903624	80	84	79	6560	98	4593	30
40	17027	28	882244	75	80	74	7659	99	3521	20
50	21755	28	860869	71	75	71	8758	1000	2449	10
47 0	26483	27	839498	66	71	66	9858	01	1376	013
10	31211	28	818132	61	66	61	0958	02	0303	50
20	35939	27	796771	56	61	57	2058	03	9230	40
30	40666	28	775415	51	56	52	3159	04	8157	30
40	45394	27	754064	46	51	48	4260	05	7083	20
50	50122	27	732718	42	46	43	5362	06	6009	10
60	54850	27	711376	37	42	37	6463	07	4935	012

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logar.	Sinu.	D.	
48	0 1154850	17	1 711376	11	194913	39	1 6463	02	4935	60
10	59577	17	0 690039	37	172474	39	7565	01	3861	50
20	64305	18	668707	31	150041	33	8666	01	2787	40
30	69032	17	647389	27	127612	29	9768	01	1712	30
40	73760	18	626058	21	105188	24	0870	01	0637	20
50	78487	17	604741	17	082768	20	1973	1103	9562	10
		18		13		16				
49	0 83215	17	583428	08	060352	11	3076	01	8487	76
10	87942	17	562120	03	037941	07	4179	04	7411	50
20	92669	17	540817	98	015534	01	5283	04	6335	40
30	97396	18	518519	94	993133	98	6386	04	5259	30
40	102124	27	498225	89	970735	93	7490	04	4183	20
50	06851	27	476936	84	948342	88	8594	05	3106	10
50	0 11578	16	455652	79	925954	84	9698	05	2030	0 10
10	16305	16	433373	75	903570	79	0803	05	0953	77
20	21033	17	413098	70	881191	75	1907	05	9876	67
30	25759	16	391828	65	858816	70	3012	06	8798	78
40	30486	17	370563	61	836446	67	4117	06	7720	30
50	35212	17	349302	56	814079	62	5223	06	6642	20
51	0 39939	16	328046	51	791717	57	6329	06	5564	0 9
10	44666	16	306795	46	769360	53	7435	07	4486	50
20	49392	17	285549	41	747007	47	8542	07	3408	40
30	54119	16	264308	37	724660	44	9648	06	2329	79
40	58846	16	243071	32	702316	39	0755	07	1259	30
50	63572	17	221839	27	679977	34	1862	07	0171	20
52	0 68298	17	200612	23	657643	31	2969	08	9092	0 8
10	73025	16	179389	18	635312	25	4077	07	8011	50
20	77751	13	158171	13	612987	21	5184	08	6931	40
30	82477	27	136958	08	590666	16	6292	08	5851	30
40	87204	26	115750	03	568350	12	7400	09	4771	20
50	91930	26	094547	99	546038	08	8509	09	3690	10
53	0 96656	17	073348	94	523730	03	9618	10	2609	0 7
10	101382	149	052154	89	501427	99	0727	10	1528	50
20	06108	149	030965	84	479128	93	1837	09	0447	40
30	10834	149	009781	80	456835	90	2946	10	9365	30
40	15560	149	988601	75	434545	85	4056	10	8284	20
50	20286	149	967426	71	412260	81	5166	10	7202	10
60	25012	149	946255		389979		6276		6119	0 6

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S.M.

Grad. 12.

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M. S.	Sinus	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus	D.
1 0	12325012	25	946255	66	147	77	6276	11	6119	60
10	29737	25	925089	61	367702	71	7387	11	5037	50
20	34463	26	903928	56	345431	67	8497	10	3954	40
30	39189	25	882772	52	323164	63	9608	11	2871	30
40	43914	26	861620	47	300901	59	0719	11	1788	20
50	48640	25	840473	42	278642	54	1831	11	0705	10
5 0	53365	26	819331	37	256388	49	2943	11	9621	0 5
10	58091	25	798194	33	234139	46	4055	13	8537	50
20	62816	25	777061	28	211893	40	5168	12	7453	40
30	67541	26	755933	24	189653	37	6280	13	6369	30
40	72267	26	734809	19	167416	32	7393	13	5284	20
50	76992	25	713690	14	145184	27	8506	14	4200	10
6 0	81717	26	692576	09	122957	23	9619	14	3115	0 4
10	86442	25	671467	05	100734	18	0733	13	2029	50
20	91167	25	650362	00	078516	14	1846	13	0944	40
30	95892	26	629262	95	056302	09	2960	14	9858	30
40	100617	25	608167	90	034093	04	4074	14	8772	20
50	05342	25	587077	86	011885	01	5188	15	7686	10
7 0	10067	24	565991	81	989688	95	6303	14	6600	0 3
10	14792	24	544910	76	967493	91	7417	14	5513	50
20	19517	24	523834	72	945307	87	8532	14	4427	40
30	24241	25	502762	67	923115	83	9647	14	3340	30
40	28966	24	481695	62	900932	78	0763	14	2252	20
50	33690	24	460633	58	878754	75	1879	14	1165	10
8 0	38415	24	439575	53	856571	69	2996	14	0077	0 2
10	43136	24	418522	49	834410	66	4112	14	9895	50
20	47864	24	397473	44	812244	61	5229	14	7501	40
30	52588	25	376425	39	790083	56	6346	14	6812	30
40	57313	24	355390	34	767927	52	7463	14	5724	20
50	62037	24	334356	29	745775	46	8581	14	4635	10
9 0	66761	24	313327	25	723625	43	9698	14	3546	0 1
10	71485	24	292302	20	701486	38	0816	14	2456	50
20	76204	24	271282	16	679348	34	1934	14	1367	40
30	80933	25	250266	12	657214	31	3052	14	0277	30
40	85657	24	229254	07	635083	26	4171	14	9187	20
50	90381	24	208247	02	612957	22	5290	14	8097	10
60	95105	24	187245		590835		6410	14	7006	0 0

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.	
0	0	11495105	187245	97	590835	16	6410	19	7006	60	
10	99839	4724	166248	93	568719	13	7529	19	5916	50	
20	12504553	149	145255	88	546606	10	8649	110	4825	40	
30	09277	24	124267	84	524498	04	9769	110	3734	30	
40	14001	23	103283	79	502394	00	0889	21	2642	20	
50	18724	23	082304	74	480294	00	160	21	1551	10	
1	0	24	061330	69	458199	95	3131	21	0459	05	
10	23448	23	040361	65	436109	90	4252	22	9367	50	
20	32895	23	019396	60	414023	82	5373	22	8274	40	
30	37618	24	998436	56	391941	77	6495	21	7182	30	
40	42342	23	977780	51	369854	73	7616	22	6089	20	
50	47065	23	956529	46	347791	68	8738	22	4996	10	
2	0	23	935583	42	325723	65	9860	23	3903	05	
10	56511	24	914641	37	303658	59	0983	22	2809	50	
20	61235	23	893704	32	281595	55	2105	23	1716	40	
30	65958	23	872772	28	259544	51	3228	23	0622	30	
40	70681	23	851844	23	237493	47	4351	24	9523	20	
50	75404	18	830921	18	215446	41	5475	24	8433	10	
3	0	14	810003	14	193405	37	6598	3	7339	05	
10	84850	12	789089	09	171365	33	7721	24	6244	50	
20	89572	13	768180	04	149335	28	8845	24	5149	40	
30	94295	00	747276	00	127307	25	9965	25	4054	30	
40	99018	95	726376	95	10528	20	1094	25	2958	20	
50	12603741	22	705481	20	08326	17	2219	26	1862	10	
4	0	21	684595	21	061245	11	3345	26	0766	05	
10	13186	18	663704	86	039234	07	4471	26	9670	50	
20	17908	17	642822	81	017207	03	5596	26	8574	40	
30	22631	23	621946	77	995224	99	6721	27	7477	30	
40	27355	23	601073	73	973225	95	7848	27	6380	20	
50	32079	23	580205	68	951230	89	8971	27	5283	10	
5	0	12	559342	63	929241	86	0101	28	4185	05	
10	36758	11	538483	59	907255	81	1215	27	3088	50	
20	41510	11	517629	54	885274	77	2355	28	1990	40	
30	46242	23	496780	49	863297	71	3483	27	0892	30	
40	50965	22	475935	45	841325	68	4610	27	9794	20	
50	55687	22	455095	40	819357	63	5738	28	8695	10	
60	60409	22	434260	35	797394	60	6866	28	7597	05	

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J. A.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.	
6	0	12665131	14	31	797394	59	6866	28	7597	60	
10		69853	14	26	775431	55	7994	1129	6498	50	
20		74575	21	22	753480	51	9113	30	5399	40	
30		79196	47	18	731529	47	10152	30	4299	30	
40		84018	72	13	709582	42	1381	30	3199	20	
50		88740	98	08	687640	37	2510	30	2100	10	
7	0	93462	107	04	665703	33	3639	30	1000	01	53
10		98183	107	99	643770	29	4768	30	9899	00	50
20		12702905	95	95	621841	25	5898	30	8759	01	40
30		07626	82	91	599916	21	7028	31	7698	30	
40		12348	87	87	577994	18	8159	31	6597	20	
50		17069	82	82	556076	13	9290	31	5496	10	
8	0	21791	77	77	534163	08	10421	32	4394	01	52
10		26512	73	73	512255	05	1552	32	3293	02	50
20		31233	68	68	490350	99	2684	31	2191	03	40
30		35954	63	63	468451	95	3815	32	1088	02	30
40		40675	59	59	446556	91	4947	32	9986	03	20
50		45397	54	54	424665	87	6079	33	8883	02	10
9	0	50118	49	49	402778	81	7214	31	7781	03	51
10		54839	44	44	380897	77	8344	33	6678	04	50
20		59559	40	40	359020	73	9477	33	5574	03	40
30		64280	35	35	337147	69	10610	34	4471	04	30
40		69001	31	31	315278	65	1744	34	3367	10	
50		73722	26	26	293413	60	2878	35	2263	10	
10	0	78443	22	22	271553	57	4012	35	1159	05	50
10		83163	17	17	249696	51	5147	34	0054	04	50
20		87884	13	13	227845	48	6281	35	8950	05	40
30		92604	09	09	205997	44	7416	35	7845	30	
40		97325	05	05	184153	40	8551	36	6740	20	
50		12802045	00	00	162313	36	9686	36	5634	10	
11	0	06766	96	96	140477	31	10822	35	4529	05	
10		11486	91	91	118646	27	1957	36	3423	06	49
20		16106	86	86	096819	23	3093	37	2317	07	40
30		20927	81	81	074997	19	4229	37	1210	06	30
40		25647	78	78	053178	15	5366	37	0104	07	20
50		30367	73	73	031463	11	6503	38	8997	10	
60		35087			009552		7641	38	7890		048

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S.M.

Grad. 13.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
12	0 22835087	4720	687193	68	5009552	05	7641	37	7890	07
10	39807	147	666525	206	987747	01	8778	38	6783	50
20	44527	210	645861	63	965946	217	9916	37	5676	40
30	49147	19	625203	59	944150	96	1053	37	4568	30
40	53967	10	604548	55	922357	93	1191	38	3460	20
50	58687	19	583897	51	900568	89	1329	39	2352	10
13	0 63406	10	563252	45	878784	84	4468	39	1244	09
10	68116	19	542612	40	857006	78	5606	38	0135	50
20	72846	19	521976	36	835332	75	6745	39	9026	40
30	77565	10	501344	32	813460	71	7884	1140	7917	30
40	82285	19	480716	28	791692	68	9024	41	6808	20
50	87004	10	460093	23	769929	63	0164	40	5699	10
14	0 91724	19	439474	19	748170	59	1304	41	4589	09
10	96443	10	418860	14	726416	54	2444	41	3479	50
20	1001162	19	398251	09	704666	50	3585	40	2369	40
30	05882	10	377646	05	682921	45	4725	41	1258	30
40	10601	19	357045	01	661179	41	5866	41	0148	20
50	15320	10	336449	96	639442	37	7007	42	9037	10
15	0 20039	19	315858	91	617709	33	8149	41	7926	09
10	24758	10	295271	87	595981	28	9290	41	6815	50
20	29477	19	274689	82	574257	24	0432	42	5703	40
30	34196	10	254111	78	552537	20	1574	43	4591	30
40	38915	19	233537	74	530820	17	2717	43	3479	20
50	43634	10	212967	70	509107	13	3860	44	2367	10
16	0 48353	18	192402	65	487398	09	5004	44	1255	09
10	53071	19	171842	60	465695	03	6147	43	0142	50
20	57790	10	151287	55	443996	99	7291	43	9029	40
30	62509	18	130736	51	422302	94	8434	44	7916	30
40	67227	19	110189	47	400611	91	9578	44	6802	20
50	71946	18	089646	43	378924	87	0722	45	5689	10
17	0 76664	19	069108	38	357242	82	1866	45	4575	09
10	81383	18	048574	34	335564	78	3010	46	3461	50
20	86101	19	028045	29	313890	74	4155	45	2347	40
30	90819	10	007521	24	292221	69	5300	46	1232	30
40	95537	19	987001	20	270555	66	6446	46	0117	20
50	1000256	18	966485	16	248893	62	7592	9731	9002	10
60	04974	18	945974	11	227236	57	8738	9731	7887	09

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
18 0	13004974	146	945974	205	227236	53	8738	46	7887	60
10	09692	4718	925467	07	205583	215	9884	46	6772	50
20	14410	146	904965	02	183934	49	1031	47	5656	40
30	19128	17	884467	98	162290	44	2177	46	4540	30
40	23846	18	863973	94	140649	41	3324	47	3424	20
50	28564	17	843484	89	119013	36	4471	48	2308	10
19 0	33281	18	822999	85	097380	33	5619	47	1191	0 41
10	37999	17	802518	81	075752	28	6766	47	0074	50
20	42717	17	782042	76	054128	24	7914	48	8957	40
30	47434	17	761571	71	032509	19	9062	50	7840	30
40	52152	18	741104	67	010893	12	0211	1149	6723	20
50	56870	17	720641	63	989281	07	1360	50	5605	10
20 0	61587	17	700183	58	967674	04	2509	50	4487	0 40
10	66304	18	679719	54	946070	98	3659	49	3369	50
20	71022	17	659280	49	924472	215	4808	50	2250	40
30	75739	17	638835	45	902877	95	5958	50	1132	30
40	80456	18	618394	41	881287	90	7107	49	0013	20
50	85174	17	597958	36	859701	86	8257	50	8894	10
21 0	89891	17	577527	31	838119	82	9408	51	7775	0 39
10	94608	18	557100	27	816541	78	0559	52	6655	50
20	99325	18	536678	22	794968	73	1710	52	5535	40
30	13104042	17	516260	18	773399	69	2861	51	4415	30
40	08759	16	495846	14	751834	65	4012	52	3295	20
50	13476	16	475436	10	730272	62	5164	51	2175	10
22 0	18193	16	455031	05	708716	56	6315	51	1054	0 38
10	22909	17	434630	01	687163	53	7467	52	9933	50
20	27626	17	414234	96	665614	49	8620	52	8812	40
30	32343	16	393842	92	644070	44	9772	53	7690	30
40	37059	17	373455	87	622530	40	0925	53	6569	20
50	41776	16	353072	83	600994	36	2078	54	5447	10
23 0	46492	17	332693	79	579462	32	3231	54	4325	0 37
10	51209	16	312318	75	557933	29	4385	53	3203	50
20	55925	17	291948	70	536410	23	5538	54	2080	40
30	60642	16	271583	65	514891	19	6692	54	0957	30
40	65358	16	251222	61	493376	15	7846	55	9834	20
50	70074	16	230866	56	471865	11	9001	55	8711	10
60	74790	16	210514	52	450358	07	60156	55	7588	0 36

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S.M.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinu.	D.
24 0	2317479	16	210514	203	450358	03	0156	55	7588	60
10	79506	16	190166	43	428855	03	1311	56	6464	50
20	84223	17	169822	44	407355	00	2467	56	5340	40
30	88939	16	149483	39	385861	94	3612	55	4216	30
40	93655	15	129148	35	364370	91	4778	56	3092	20
50	98370	15	108818	30	342884	86	5934	57	1967	10
25 0	2320308	4716	088492	22	321401	78	7091	56	0842	035
10	07802	15	068170	18	299923	75	8247	57	9717	50
20	12518	15	047852	13	278448	70	9404	57	8592	40
30	17234	15	027539	09	256978	67	0561	58	7467	30
40	21949	16	007230	04	235511	62	1719	58	6341	20
50	26665	15	986926	99	214045	57	2877	58	5216	10
26 0	31380	16	966627	95	192592	54	4035	59	4089	034
10	36096	15	946332	91	171138	49	5194	58	2962	50
20	40811	15	926041	87	149685	46	6352	59	1836	40
30	45526	16	905754	83	128243	41	7511	58	0709	30
40	50242	15	885471	79	106802	38	8669	59	9582	20
50	54957	15	865192	74	085364	33	9828	59	8455	10
27 0	59672	16	844918	70	063931	30	0987	60	7327	033
10	64387	15	824648	66	042501	25	2147	59	6199	50
20	69102	15	804382	61	021076	21	3306	60	5071	40
30	73817	14	784141	57	999655	17	4466	61	3943	30
40	78532	14	763864	52	978238	13	5626	61	2814	20
50	83247	14	743612	47	956825	08	6787	61	1686	10
28 0	87962	14	723365	43	935417	04	7948	62	0557	032
10	92677	13	703122	39	914013	01	9109	62	9428	50
20	97392	13	682883	35	892612	01	0271	61	8298	40
30	23302107	14	662648	31	871216	96	1432	62	7169	30
40	06821	15	642417	27	849823	93	2594	62	6039	20
50	11536	14	622190	22	828434	89	3756	63	4909	10
29 0	16250	15	601968	18	807050	84	4918	63	3779	031
10	20965	14	581750	14	785669	81	6081	62	2648	50
20	25679	15	561536	10	764293	76	7243	63	1517	40
30	30394	14	541326	05	742920	73	8406	64	0386	30
40	35108	14	521122	01	721552	68	9569	64	9255	20
50	39822	14	500920	00	700187	65	0723	64	8124	10
60	44536	14	480723	97	678826	61	1897	64	6992	030

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.
30 0	23344536	15	480723	201	678826	57	1897	64	6992	60
10	49251	145	460530	89	657469	53	3061	64	5860	50
20	53965	4714	440341	84	636116	49	4225	65	4728	40
30	58679		420157	79	614767	43	5390	64	3596	30
40	63393		399978	74	593424	39	6554	65	2463	20
50	68107		379804	70	572085	36	7719	66	1330	10
31 0	72820	13	359634	66	550749	31	8885	65	0197	029
10	77534	14	339468	62	529418	28	0050	66	5064	50
20	82248		319306	58	508090	24	1216	66	7931	40
30	86961	13	299148	54	486766	21	2382	67	6797	30
40	91675	14	278994	49	465445	15	3549	66	5663	20
50	96389		258845	45	444130	12	4715	67	4529	10
32 0	23401103	13	238700	41	422818	08	5882		3394	028
10	05816	14	218559	36	401510	04	7049	68	2260	50
20	10530		198423	31	380206	98	8217	67	1125	40
30	15243	13	178292	27	358908	95	9384	67	9985	30
40	19956	14	158165	22	337613	90	0552	108	8854	20
50	24670		138043	18	316323	86	1720	118	7719	10
33 0	29383		117925	14	295037	83	2888	65	6583	027
10	34096		097811	10	273754	79	4057		5447	50
20	38809		077701	06	252475	75	5226		4310	40
30	43522		057595	01	231200	70	6395		3174	30
40	48335		037494	97	209930	66	7564		2038	20
50	52948		017397	93	188664	63	8733	70	0901	10
34 0	57661	14	997304	89	167401	59	9903	70	9764	026
10	62374		977215	85	146142	56	1873	71	8622	50
20	67087	12	957130	80	124886	50	2244	70	7485	40
30	71799	13	937050	76	103636	47	3414	71	6351	30
40	76512	12	916974	71	082385	42	4585		5213	20
50	81224	13	896903	67	061147	38	5756		4074	10
35 0	85937		876836	63	039905	35	6917	72	2936	025
10	90650	12	856773	59	018674	30	8095	71	1797	50
20	95362		836714	55	997444	27	9270	72	0658	40
30	23500074	13	816659	50	976217	22	0442	72	9519	30
40	04787	12	796609	46	954995	19	1614	73	8380	20
50	09479		776563	42	933776	15	2787		7240	10
60	14211		756521		912561		3960		6100	024

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S.M

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M. S.	Sinns.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinns.	D.
36 0	23514211	12	756521	38	912561	11	3960	73	6100	60
10	18923	11	736483	33	891350	212	5133	74	4960	50
20	23636	13	716450	33	870143	07	6307	73	3820	40
30	28348	4712	696421	29	848941	02	7480	73	2679	30
40	33060	12	676396	25	827742	99	8654	1174	1538	20
50	37772	12	656375	21	806547	95	9828	74	0397	10
37 0	42484	11	636358	17	785350	91	1002	75	9216	023
10	47195	12	616345	13	764168	88	2177	75	8114	42
20	51907	12	596336	05	742985	83	3351	75	6973	41
30	56619	11	576332	04	721806	79	4526	75	5831	41
40	61331	11	556333	94	700632	74	5701	76	4689	30
50	66042	12	536339	90	679462	70	6877	76	3546	20
38 0	70754	11	516349	86	658296	66	8053	76	2404	10
10	75465	11	496363	81	637134	62	9229	77	1261	42
20	80177	12	476381	78	615975	59	0406	77	0118	40
30	84888	11	456403	74	594821	54	1582	76	9174	44
40	89599	12	436429	70	573670	51	2759	77	7831	43
50	94311	12	416455	67	552523	47	3936	77	6687	44
39 0	99022	11	396492	63	531375	44	5113	78	5543	021
10	13603733	11	376524	58	510238	41	6291	77	4399	50
20	08444	11	356571	53	489103	35	7468	77	3254	40
30	13155	11	336618	48	467972	31	8646	78	2110	44
40	17866	11	316670	43	446846	26	9824	78	0965	30
50	22577	11	296727	39	425725	21	1002	79	9820	20
40 0	27288	11	276788	34	404607	18	2181	79	8674	10
10	31999	11	256852	30	383493	14	3359	78	7529	020
20	36710	11	236920	28	362382	11	4538	79	6383	50
30	41421	10	216992	24	341275	07	5717	80	5237	40
40	46131	11	197068	19	320171	04	6897	80	4090	30
50	50842	10	177149	15	299072	99	8077	81	2944	20
41 0	55552	11	157234	11	277976	96	9258	81	1797	10
10	60263	11	137323	07	256885	91	0438	80	0650	019
20	64973	11	117416	03	235797	88	1619	81	9503	50
30	69684	10	097513	00	214713	84	2800	81	8356	40
40	74394	11	077614	99	193632	81	3982	82	7208	30
50	79104	11	057720	94	172557	75	5163	81	6060	20
60	83815	11	037830	90	151485	72	6345	82	4912	10

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.	
42 0	23683815	14	037830	86	152485	68	6345	82	4912	60	
10	88525	410	017944	82	130417	110	7527	83	3764	48	50
20	93235	143	998062	78	109352	60	8710	82	2615	40	
30	97945		978184	73	088292	56	9892	1183	1466	32	
40	23702655		958311	69	067236	52	1075	89	0317	20	
50	07365		938442	65	046184	48	2258	83	9168	10	
43 0	12075		918577	61	025136	45	3441	84	8019	50	017
10	16785	09	898716	56	004091	39	4625	84	6869	50	
20	21494	10	878860	52	983052	36	5808	83	5719	40	
30	16204		859008	48	962016	32	6992	84	4569	30	
40	30914	09	839160	44	940984	29	8176	85	3418	20	
50	35623	10	819316	40	919955	25	9361		2268	10	
44 0	40333		799476	36	898930	21	0546		1117		016
10	45043	09	779640	32	877909	18	1731	86	9966	50	
20	49751		759808	27	856891	12	2917	85	8814	52	40
30	54461	10	739981	23	835879	09	4102	86	7663	52	30
40	59171	09	720158	19	814870	05	5288		6511	20	
50	63880		700339	15	793865	01	6474		5359	10	
45 0	68589		680524	11	772864	98	7660	87	4207		015
10	73298	10	660713	07	751866	93	8847	86	3055	50	
20	78008	09	640906	02	730873	89	0033	87	1902	53	40
30	82717		621104	98	709884	85	1220		0745	30	
40	87426	08	601306	94	688899	81	2407	88	9596	20	
50	92135	09	581512	90	667918	78	3594	88	8442	54	10
46 0	96843		561722	86	646940	73	4782	87	7289	53	014
10	23801552	08	541936	82	625967	70	5965	88	6135	54	50
20	06261		522154	77	604997	65	7157		4981	40	
30	10970	08	502377	73	584032	61	8345	89	3827	30	
40	15678	09	482604	69	563070	58	9534		2672	20	
50	20387		462835	65	542112	55	0723	90	1518	54	10
47 0	25096		443070	61	521157	50	1913	89	0363	55	013
10	29804	08	423309	56	500207	46	3102	90	9207	56	50
20	34513	09	403553	52	479261	42	4292		8052	55	40
30	39221		383801	48	458319	38	5482		6896	56	30
40	43919	08	364053	44	437381	35	6672	91	5740		20
50	48638	09	344309	40	416446	30	7863	90	4584		10
60	53346		324569		395516		9053		3428		012

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J. M.

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M.S.	Sinu.	D. Logarith.	D.	Different.	D. Logar.	D.	Sinu.	D.
48 0	2385346	143	197	395516	17	29053	91	3428
10	58054	143	140	374589	13	0244	91	1271
20	62762	143	209	353666	20	1435	92	1115
30	67470	143	28	332746	14	2627	92	9958
40	72178	143	23	311832	11	3818	91	8800
50	76886	143	19	290921	07	5010	92	7643
49 0	81594	143	15	270014	04	6202	93	6485
10	86302	143	11	249110	09	7395	92	5327
20	91000	143	07	228211	06	8587	92	4169
30	95717	143	03	207315	08	9780	93	3011
40	100425	143	09	186424	09	0973	92	1852
50	05132	143	05	165536	08	2166	94	0693
50 0	09840	143	01	144651	08	3360	93	9534
10	14548	143	87	123771	80	4553	94	8375
20	19255	143	83	102894	77	5747	94	7215
30	23962	143	78	082022	72	6941	95	6056
40	28670	143	74	061153	69	8136	95	4896
50	33377	143	70	040288	65	9331	96	3735
51 0	38084	143	66	019426	61	0527	96	2575
10	42791	143	62	998569	57	1722	95	1414
20	47498	143	58	977716	53	2917	96	0253
30	52205	143	54	956866	50	4113	97	9092
40	56912	143	49	936011	45	5309	97	7931
50	61619	143	45	915179	42	6506	97	6769
52 0	66326	143	41	894341	38	7703	98	5608
10	71033	143	38	873506	35	8900	98	4446
20	75740	143	34	852674	32	0098	98	3283
30	80446	143	29	831848	26	1295	97	2121
40	85153	143	25	811025	23	2493	98	0958
50	89860	143	21	790207	18	3690	97	9795
53 0	94566	143	17	769392	15	4888	98	8632
10	99273	143	13	748580	12	6087	99	7469
20	1003979	143	09	727773	07	7285	98	6305
30	08685	143	05	706969	04	8484	99	5141
40	13392	143	01	686169	00	9683	100	3977
50	18098	143	96	665373	96	0883	100	2813
60	22804	143	92	644581	92	2083	100	1648

Grad. 76.

S.M

Grad. 13.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.	
54	2402204	4706	616664	89	644581	89	2083	00	97079706	1648	60
10	27510		597075	101	623792	101	3283	01	0483	50	50
20	32216		577490	80	603006	80	4484	01	9318	40	40
30	36922		517910	76	582226	77	5684	01	8153	30	30
40	41628		538334	72	561449	73	6885	01	6988	20	20
50	46334		518761	68	540676	69	8086	01	5822	10	10
55	51040		499194	64	519907	66	9287	02	4656	05	5
10	55746		479639	60	499141	61	0489	02	3490	50	50
20	60452		460070	56	478380	58	1690	01	2324	40	40
30	65157	05	440514	54	457622	54	2892	02	1157	67	30
40	69863	06	420962	48	436868	51	4094	03	9990	20	20
50	74569	05	401414	44	416117	47	5297	03	8823	10	10
56	79274	06	381870	40	395370	43	6500	04	7656	68	0 4
10	83980	05	362330	36	374627	39	7703	04	6488	67	50
20	88685	05	342794	31	353888	35	8906	04	5321	67	40
30	93390	06	323263	27	333153	30	0110	03	4153	69	30
40	98096	05	303736	23	312423	27	1313	04	2984	69	10
50	14102801	05	284213	19	291696	23	2517	04	1816	68	10
57	07506		264694	16	270973	21	3721	05	0647	69	0 3
10	12211		245178	11	250252	15	4926	05	9478	50	50
20	16916		225667	07	229537	12	6130	05	8309	40	40
30	21621		206160	03	208825	08	7335	06	7140	70	30
40	26326		186657	99	188117	05	8540	06	5970	69	20
50	31031		167158	95	167412	00	9746	05	4801	70	10
58	35736		147663	91	146712	97	0951	06	3631	71	0 2
10	40441		128172	87	126015	93	2157	06	2460	50	50
20	45145		108685	83	105322	90	3363	07	1290	70	40
30	49850	04	089202	79	084632	85	4570	06	0119	71	30
40	54555	05	069723	75	063947	82	5776	07	8948	10	10
50	59259	04	050248	71	043265	78	6983	07	7777	10	10
59	63964	05	030777	67	022587	75	8190	08	6606	72	0 1
10	68668	04	011310	63	001912	70	9398	07	5434	50	50
20	73373	04	991847	59	981242	67	0605	08	4262	40	40
30	78077	04	972388	55	960575	63	1813	08	3090	30	30
40	82781	05	952933	51	939912	60	3021	09	1918	20	20
50	87485	05	933482	46	919252	54	4230	08	0745	73	10
60	92190		914036		898598		5438		29573	72	0 0

Grad. 75.

J.M.

Grad. 14.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logar.	D.	Sinus.	D.	
0	24192190		141	914036		138	5438		9701	9573	60
10	96894	4704	141	894593	43	138	6647	69	8400	73	50
20	24201598		194	875154	39	106	7856	48	7216	74	40
30	06302			855719	35	45	9066	45	6053	73	30
40	11006	03		836288	31	40	10275	40	4879	1174	20
50	15709	04		816861	26	36	11485	36	3705	1174	10
1	20413			797440	22	32	12695	32	2531		059
10	25117	03		778021	19	30	13906	30	1357	75	50
20	29821	03		758606	15	25	15116	25	0182	74	40
30	34524	04		739195	11	22	16327	22	9008	75	30
40	39228			719788	07	18	17538	18	7833	76	20
50	43932	03		700385	03	15	18750	15	6657	75	10
2	48635		193	680986	99	10	19961	10	5482	76	058
10	53338	04		661591	95	07	11173	07	4306		50
20	58042	03		642200	91	03	12385	03	3130		40
30	62745			622813	87	00	13598	00	1954		30
40	67448			603430	83	95	14810	95	0778	77	20
50	72151	04		584052	78	91	16023	91	9661		10
3	76855	03		564678	74	87	17236	87	8424		057
10	81558			545308	70	84	18450	84	7247		50
20	86261			525942	66	79	19663	79	6070	78	40
30	90964	03		506579	63	77	20877	77	4892		30
40	95667	02		487220	59	73	22091	73	3714		20
50	14300369	03		467864	56	71	23306	71	2536		10
4	05072	03		448512	52	67	24521	67	1358		056
10	09775			429165	47	62	25736	62	0180	79	50
20	14478	01		409822	43	58	26951	58	9001		40
30	19180	03		390484	38	54	28167	54	7822		30
40	23883	02		371149	35	50	29382	50	6643	80	20
50	28585	03		351818	31	47	30598	47	5463	79	10
5	33288	02		332491	27	43	31814	43	4284	80	055
10	37990			313167	84	41	33031	41	3104		50
20	42692	03		293847	25	36	34247	36	1924		40
30	47395	02		274531	15	32	35464	32	0744	81	30
40	52097			255221	11	28	36681	28	9563		20
50	56799	03		235914	07	24	37898	24	8382	80	10
60	61501			216611	03	21	39116	21	7202		054

Grad. 75.

S.M.

Grad. 14.

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M. S.	Sinu.	D.	Logarith.	D.	Differenc.	D.	Logar.	D.	Sinu.	D.
6 0	14361501		216611		157495	17	59116	17	7202	60
10	66203	4702	197311	197311	136978	205	0333	18	6010	50
20	70905		178015	197311	116464	14	1551	18	4839	40
30	75607		158723	92	095954	10	2769	19	3657	30
40	80309		139435	88	075447	07	3988		2475	20
50	85011		120152	83	054945	02	5207		1293	10
7 0	89713	01	100873	79	034446	99	6427	20	0111	053
10	94414	02	081597	76	013951	95	7646	19	8912	50
20	99116		062325	72	993459	92	8866	120	7746	40
30	14403818	01	043058	67	972972	87	0086	110	6563	30
40	08519	02	023795	63	952489	83	1306	21	5379	20
50	13221	01	004536	59	932009	80	2517	20	4196	10
8 0	17922	140	985281	55	911534	75	3747	21	3012	052
10	22623	02	966029	52	891061	73	4968	21	1818	50
20	27325	01	946781	48	870592	69	6189	22	0644	40
30	32026	01	927537	44	850126	66	7411	22	9460	30
40	36727		908297	40	829665	61	8632	21	8275	20
50	41428		889062	35	809205	57	9854	22	7090	10
9 0	46129		869832	31	788755	53	1076		5905	051
10	50830		850603	28	768304	51	2299	23	4710	50
20	55531		831379	24	747858	46	3521	22	3534	40
30	60232		812159	20	727415	43	4744	23	2349	30
40	64933		792942	17	706975	40	5967		1163	20
50	69634		773729	13	686539	36	7190		9976	10
10 0	74334	00	754520	09	666106	33	8414	24	8790	86
10	79035	01	735315	05	645678	28	9637	23	7603	87
20	83736	00	716114	01	625253	25	0861	24	6416	050
30	88436	01	696917	97	604832	21	2085		5229	50
40	93137	00	677724	93	584414	18	3310	25	4042	40
50	97837	00	658535	89	564000	14	4535	26	2854	30
11 0	14502537	01	639351	84	543590	10	5761	26	1667	27
10	07238	00	620170	81	523184	06	6986	25	0479	88
20	11938	00	600993	77	502721	03	8212	26	9290	89
30	16638		581820	73	482382	99	9438		8102	88
40	21338		562651	69	461987	95	0664		6913	89
50	26039	01	543485	66	441594	93	1891	27	5724	20
60	30739	00	524323	62	421206	88	3117	26	4535	10
										048

Grad. 75.

S.M.

Grad. 14.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
12	0 24530739	00	140 524323	8	137 421206	85	3103117	17	9694 4535	89	60
10	35439	99	505165	1915	409821	81	04344	17	3346	89	50
20	40138	99	486011	0	380440	81	05571	18	2156	90	40
30	44838	4700	466861	0	360061	2018	06799	17	0966	90	30
40	49538	4700	447714	47	339688	2017	08026	17	9776	90	20
50	54238	4700	428571	43	319317	1	09254	18	8586	91	10
13	0 58938	4699	409432	39	298950	67	10482	29	7395	91	047
10	63637	00	390298	34	278587	63	11755	29	6204	91	50
20	68337	00	371168	30	258219	58	12	28	5013	91	40
30	73036	99	352042	26	237874	55	14108	30	3822	92	30
40	77736	99	332919	23	217522	52	15397	30	2631	92	20
50	82435	99	313800	19	197174	48	16626	31	1439	92	10
14	0 87134	00	294685	15	176829	45	17856	29	0247	93	046
10	91834	99	275574	11	156489	40	19085	29	9055	93	50
20	96533	99	256467	07	136152	37	20315	30	7863	93	40
30	14601232	00	237364	03	115818	34	21546	31	6670	93	30
40	05931	99	218265	9	095488	30	22777	31	5477	94	20
50	10630	99	199170	5	075162	26	24008	32	4284	94	10
15	0 15329	00	180079	1	054839	23	25240	32	3091	94	045
10	20028	99	160992	87	034521	18	26471	32	1897	94	50
20	24727	99	141909	83	014206	15	27703	32	0704	94	40
30	29426	98	122829	80	993894	12	28935	33	9510	94	30
40	34125	98	103753	76	973586	08	30167	33	8316	94	20
50	38824	98	084680	73	953280	06	31400	33	7121	94	10
16	0 43522	98	065611	69	932979	01	32632	34	5927	94	044
10	48221	99	046546	65	912681	2018	33865	34	4732	95	50
20	52919	98	027484	62	892386	2019	35098	34	3537	95	40
30	57618	99	008427	57	872095	1	36332	34	2341	95	30
40	62316	98	989375	52	851810	85	37565	35	1146	95	20
50	67014	98	970327	48	831528	82	38799	34	9950	96	10
17	0 71713	98	951283	44	811250	78	40033	35	8754	96	043
10	76411	98	932241	41	790974	76	41268	35	7558	97	50
20	81109	98	913205	37	770703	71	42502	34	6361	97	40
30	85807	98	894172	33	750435	68	43737	35	5165	96	30
40	90501	98	875143	29	730171	64	44972	35	3968	97	20
50	95201	98	856117	26	709909	62	46208	36	2771	98	10
60	99901	98	837095	22	689652	57	47443	35	1573	98	042

Grad. 75.

S.M.

Grad. 14.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	24699901		837095		689652		3147443		96909689	60
10	24704599	468	818077	8	669398	34	48679	36	97	90
20	09297		799063	4	649148	50	49915		98	40
30	13995	97	780053	07	628901	2014	51152	37	7980	30
40	18692		761046	03	608658	0	52388	36	6781	10
50	23390	98	742043	9	588418	36	53625	37	5583	10
19 0	28088		723044	1895	568182	33	54862	38	4384	041
10	32785	97	704049	1	547949	28	56100	37	3185	50
20	37483		685058	88	527721	26	57337	38	1986	40
30	42180	97	666070	84	507495	22	58575		0787	30
40	46877		647086	80	487273	19	59813	1239	9587	10
50	51575	98	628106	76	467054	15	61052	40	8387	10
20 0	56272		609130	72	446839	11	62291	39	7187	040
10	60969		590158	68	426628	07	63530	40	5987	50
20	65666		571190	64	406421	04	64769	40	4786	40
30	70363		552226	60	386217	9	66009	39	3585	30
40	75060		533266	57	366018	7	67248	40	2384	10
50	79757		514309	53	345821	3	68488	41	1183	10
21 0	84454		495356	49	325628	90	69728	41	9982	02 039
10	89151		476407	45	305438	85	70969	40	8780	50
20	93848		457462	41	285253	82	72209	41	7578	40
30	98545	96	438521	37	265071	78	73450	42	6376	30
40	14803241		419584	34	244893	76	74691	42	5173	03
50	07938	97	400650	30	224717	71	75933	41	3971	02 10
22 0	12635		381720	26	204546	68	77174	42	2768	03 038
10	17331		362794	22	184378	64	78416	43	1565	50
20	22027		343873	18	164214	61	79658	43	0362	40
30	26724	96	324954	15	144053	57	80901	42	9158	04 30
40	31420		306039	11	123896	54	82143	43	7954	20
50	36116	97	287128	07	103742	50	83386	44	6750	10
23 0	40813		268221	03	083592	47	84629	44	5546	037
10	45509		249318	9	063445	43	85873	43	4342	50
20	50205	96	230419	89	043303	39	87116	44	3137	40
30	54901		211524	88	023164	36	88360	44	1932	30
40	59597		192632	84	003028	32	89604	45	0727	20
50	64293		173744	80	982896	29	90848	45	9522	10
60	68989		154860	76	962767	25	92095	46	8316	06 036

Grad. 75.

S.M.

Grad. 14.

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M. S.	Sin.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sin.	D.
24 0	24868989	96	154860	80	962767	25	3191093	45	968316	60
10	73685	95	135980	77	942642	22	93338	46	7110	50
20	78380	96	117103	73	922520	20	94583	46	5904	40
30	83076	96	098230	69	902401	2011	95829	45	4698	30
40	87771	95	079361	1886	882287	1	97074	46	3492	20
50	92467	96	060496	1	862176	07	98320	46	2285	10
25 0	97163	95	042635	57	842069	04	99566	47	1078	035
10	24901858	95	022778	54	821965	00	3200813	46	9871	50
20	06553	96	003924	50	801865	97	02059	46	8663	40
30	11249	96	985074	46	781768	93	03306	47	7456	30
40	15944	95	966228	42	761675	90	04553	47	6248	20
50	20639	96	947386	38	741586	86	05800	48	5040	10
26 0	25334	95	928548	35	721500	82	07048	47	3832	034
10	30029	96	909713	31	701418	79	08295	48	2625	50
20	34724	95	890882	27	681339	75	09543	48	1414	40
30	39419	96	872055	23	661264	72	10791	49	0205	30
40	44114	95	853232	20	641192	69	12040	49	8996	20
50	48809	96	834412	16	621123	66	13289	50	7787	10
27 0	53404	94	815596	13	601057	62	14534	49	6577	033
10	58199	95	796783	09	580995	59	15788	50	5367	50
20	62893	95	777974	05	560936	55	17038	50	4157	40
30	67588	94	759169	01	540881	51	18288	51	2947	30
40	72283	94	740368	7	520830	48	19538	51	1736	20
50	76977	95	721571	1879	500782	44	20789	50	0525	10
28 0	81672	94	702777	0	480738	41	22039	51	9314	032
10	86366	95	683987	86	460697	37	23290	52	8103	50
20	91060	95	665201	81	440660	33	24541	52	6891	40
30	95755	94	646420	78	420627	29	25793	51	5680	30
40	25000449	94	627642	74	400598	26	27044	52	4468	20
50	05143	95	608868	71	380572	23	28296	52	3256	10
29 0	09837	93	590097	67	360549	20	29548	53	2043	031
10	14531	94	571330	63	340529	15	30801	52	0831	50
20	19225	95	552567	59	320514	12	32053	53	9618	40
30	23919	93	533808	56	300502	09	33306	54	8405	30
40	28613	94	515052	52	280493	06	34559	54	7191	20
50	33307	95	496300	48	260487	02	35813	54	5978	10
60	38000	96	477552	44	240485	01	37067	54	4764	030

Grad. 75.

S.M.

Grad. 14.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
30 0	15038000	94	2477552	44	1240485	8	3237067	34	96814764	14	60
10	42694		2458808	40	120487	1999	38321	55	35550	14	50
20	47388	93	440068	40	200492	1	39576	55	2336	15	40
30	52081	94	421331	1873	180501	89	40830	54	1121	14	30
40	56775	93	402597	73	160512	85	42085	125	9907	15	20
50	61468		383867	0	140527	81	43340	9680	8692	15	10
31 0	66161	94	365141	26	120546		44595	56	7477	16	029
10	70855		346419	22	100568	78	45851	56	6261	16	50
20	75548	93	327701	18	080595	73	47106	55	5046	15	40
30	80241		308986	15	060624	71	48362	56	3830	16	30
40	84935	94	290275	11	040657	67	49618	57	2614	16	20
50	89628	4693	271567	08	020692	65	50875	57	1398	17	10
32 0	94321	92	252864	03	000732	60	52132		0181		028
10	99014		234164	00	980775	57	53389	9679	8964	18	50
20	15103707	92	215468	96	960821	54	54647	57	7747	18	40
30	08399	93	196776	92	940872	49	55904	58	6530	19	30
40	13092		178088	88	920926	46	57162	58	5313	18	20
50	17785		159403	1668	900983	43	58420		4095	18	10
33 0	22478	91	140722	5	881044	39	59678	59	2877		027
10	27170		122045	77	861108	36	60937	59	1659	19	50
20	31862	93	103372	73	841177	31	62195	58	0441	19	40
30	36555	93	083702	70	821248	25	63454	59	9222	18	30
40	41248	91	066036	66	801323	25	64713	678	8004	18	20
50	45940	93	047373	63	781401	21	65972	60	6785	19	10
34 0	50635	92	028714	59	761482	19	67232	60	5565	20	026
10	55325		010059	55	741566	14	68491	59	4346	19	50
20	60017	92	591408	51	721657	11	69751	60	3126	20	40
30	64709	91	972761	47	701750	07	71011	61	1906	21	30
40	69401		954117	44	681845	05	72272		0686	21	20
50	74093	93	931477	40	661944	01	73533	9677	9466	21	10
35 0	78785		916841	36	642046	8	74795	61	8245		025
10	83477		898208	33	622152	1089	76056	62	7024	22	50
20	88169		879579	29	602261	1	77318		5803	22	40
30	92861		860954	25	582374	87	78580		4582	23	30
40	97553	91	842333	21	562491	83	79842	63	3361	23	20
50	15102244	92	823715	18	542610	81	81105	62	2139	23	10
60	06936		805101	14	522734	76	82367	61	0977		024

Grad. 75.

S. M.

Grad. 14.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinu.	D.		
36	0	25206936	91	805101	10	52734	73	3282367	63	70917	22	60
10	11627	91	786491	10	501861	73	83630	63	9695	22	90	
20	16319	91	767884	7	481991	70	84893	64	8472	23	40	
30	21610	91	749281	0	463124	1986	86157	64	7150	22	30	
40	2702	91	730681	96	443261	0	87410	63	6027	1223	20	
50	30393	91	712085	92	423401	56	88684	64	4804	1223	10	
37	0	35084	91	693493	8	403545	53	89948	65	3581	24	023
10	39775	91	674905	1	383692	48	91213	64	2357	50	50	
20	44467	91	656321	1	363844	46	92477	65	1133	40	40	
30	49758	91	637740	77	343998	42	93742	65	9909	30	30	
40	53849	91	619163	74	324156	40	95007	64	8685	20	10	
50	58540	91	600589	70	304316	36	96273	65	7461	10	10	
38	0	63231	90	582019	66	284480	32	97539	66	6236	25	022
10	67921	91	563453	62	264648	29	98805	67	5011	50	50	
20	72612	91	544891	59	244819	25	100072	67	3786	40	40	
30	77303	91	526332	55	224994	22	01338	67	2560	30	30	
40	81994	90	507777	52	205172	19	02605	67	1335	20	20	
50	86684	91	489225	48	185353	15	03872	68	0109	10	10	
39	0	91375	90	470677	44	165538	12	05139	68	8883	0	21
10	96665	91	452133	40	145726	07	06407	67	7657	50	50	
20	10136956	90	433593	37	125919	05	07674	68	6430	40	40	
30	05446	91	415056	33	106114	01	08942	69	5204	30	30	
40	10136	91	396523	30	086313	9	10210	69	3977	20	20	
50	14822	90	377993	25	066514	4	11479	70	2749	10	10	
40	0	19517	89	359468	22	046720	1979	12748	1522	18	020	
10	24207	90	340946	18	026929	88	14017	70	0294	50	50	
20	28897	91	322428	15	007141	84	15287	69	9066	40	40	
30	33587	89	303913	11	987357	81	16556	70	7838	30	30	
40	38277	90	285402	08	967576	78	17826	71	6610	20	20	
50	42967	91	266894	04	947798	74	19096	72	5381	10	10	
41	0	47657	89	248390	00	928014	71	20366	71	4153	0	19
10	52346	90	229890	97	908253	67	21637	70	2924	29	50	
20	57036	91	211393	93	888486	64	22907	71	1694	30	40	
30	61726	89	192900	9	868722	60	24178	72	0465	29	30	
40	66415	90	174411	6	848962	58	25449	72	9235	20	20	
50	71105	89	155925	2	829204	54	26721	73	8005	10	10	
60	75794	89	137443	1	809450	54	27993	74	6775	0	18	

Grad. 75.

S.M.

Grad. 14.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 0	5375794	90	137443	137	809450	50	3327993	72	6775	60
10	80484	89	118965	1847	789700	8	29265	73	5545	50
20	85173	89	100490	5	769952	1974	30538	73	4314	40
30	89863	90	082019	67	750209	3	31810	73	3083	30
40	94552	04689	063552	67	730469	0	33083	1273	1852	20
50	99241	04689	045089	63	710733	36	34356	73	0621	10
43 0	5403930	89	026630	59	691001	31	35629	74	9390	017
10	08619	89	008174	56	671271	30	36903	74	8158	50
20	13308	89	989721	53	651545	26	38176	73	6926	40
30	17997	136	971172	49	631812	23	39450	74	5694	30
40	22686	88	952827	45	612103	19	40724	75	4461	30
50	27375	88	934385	42	592386	17	41999	75	3229	20
44 0	32064	88	915947	38	572673	13	43274	76	1996	10
10	36752	88	897512	35	552963	10	44549	76	0763	016
20	41440	89	879081	31	533256	07	45825	76	9530	50
30	46129	89	860653	28	513553	03	47100	75	8296	40
40	50818	88	842229	24	493853	00	48376	76	7062	30
50	55506	89	823809	20	474157	16	49652	76	5828	20
45 0	60195	88	805393	16	454465	1969	50928	77	4594	10
10	64883	88	786980	13	434775	0	52205	77	3359	015
20	69571	89	768571	09	415090	85	53481	76	2125	50
30	74260	88	750166	05	395408	82	54758	77	0890	40
40	78948	88	731764	02	375729	79	56035	78	9655	30
50	83636	89	713366	01	356053	76	57313	78	8419	20
46 0	88324	88	694972	039	336381	72	58591	79	7184	10
10	93012	87	676581	1	316712	69	59869	79	5948	014
20	97700	87	658194	87	297046	66	61148	78	4712	50
30	5502388	87	639810	84	277384	62	62426	78	3476	40
40	0706	87	621430	80	257725	59	63705	79	2239	30
50	11763	88	603054	76	238070	55	64984	79	1002	20
47 0	16451	87	584681	73	218418	52	66263	80	9765	10
10	21139	87	566311	70	198768	50	67543	80	8528	013
20	25826	88	547945	66	179123	45	68822	79	7291	50
30	30514	87	529583	62	159481	42	70102	80	6053	40
40	35201	87	511225	58	139843	38	71382	81	4815	30
50	39888	88	492870	55	120207	36	72663	81	3577	20
60	44576	88	474519	51	100575	32	73944	81	2339	10

Grad. 75.

S.M.

Grad. 14.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48 0	5544576	13	474512	13	100575	19	3373944	81	2339	60
10	49263	4687	451617	1334	080946	196	75225	82	1100	50
20	53950		437827	134	061320	196	76507	82	9862	40
30	58637		419486	1	041698	19	77788	81	8623	30
40	63324		401149	37	022079	19	89070	82	7383	20
50	68011		382816	33	002464	15	80352	81	6144	10
49 0	72698		364487	29	982853	11	81634	83	4904	0 11
10	77385		346261	26	963244	09	82917	82	3664	50
20	82072		327839	22	943640	04	84199	83	2424	40
30	86759		309520	19	924038	01	85482	83	1184	30
40	91446		291205	15	904440	8	86765	84	9943	20
50	96132	86	272893	12	884844	6	88049	84	8702	10
50 0	5600819	87	254584	09	865251	3	89333	85	7461	0 10
10	05506	86	236279	05	845662	29	90617	85	6220	50
20	10192		217978	01	826076	86	91902	85	4978	40
30	14878		199681	7	806495	81	93186	84	3737	30
40	19565	87	181388	3	786917	78	94471	85	2495	20
50	24251	86	163098	0	767342	75	95756	85	1253	10
51 0	28937		144811	87	747770	72	97041	86	0010	0 9
10	33623		126528	83	728201	69	98327	86	8768	50
20	38310	87	108249	79	708630	64	99612	85	7525	40
30	42996	86	089973	76	689075	62	340898	86	6282	30
40	47682		071701	72	669517	58	02184	87	5038	20
50	52368	85	053432	69	649961	56	03471	87	3795	10
52 0	57053		035167	65	630409	52	04758	88	2551	0 8
10	61739	86	016905	62	610860	49	06045	88	1307	50
20	66425	85	998647	58	591314	46	07333	87	0063	40
30	71111	85	980392	55	571772	42	08620	87	8818	30
40	75796	86	962141	51	552233	39	09908	88	7574	20
50	80482	85	943894	47	532698	35	11196	89	6329	10
53 0	85167		925651	43	513166	32	12485	89	5084	0 7
10	89853	86	907411	40	493638	28	13773	88	3838	50
20	94538	85	889174	37	474212	26	15062	89	2593	40
30	99224	86	870940	34	454589	23	16351	90	1347	30
40	5703909	85	852710	30	435069	20	17641	90	0101	20
50	08594		834484	26	415553	16	18931	90	8854	10
60	13279		816261	23	396040	13	20221	90	7608	0 6

Grad. 75.

S.M.

Grad. 14.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54 0	25713279	4685	816161	181	396040	1950	340221	90	7608	60
10	17964		798041	181	376531	1950	21511	91	6361	50
20	22649		779827	181	357025	1950	22802	91	5114	40
30	27334		761615	08	337523	1949	24093	91	3867	30
40	32019		743407	09	318054	1949	25383	92	2620	20
50	36704		725202	01	298528	1949	26674	92	1372	10
55 0	41389		707001	18	279035	89	27966	91	0124	0 5
10	46074		688803	18	259546	86	29257	91	8876	50
20	50758	84	670609	18	240060	86	30549	92	7628	40
30	55443	85	652418	87	220577	83	31841	92	6379	30
40	60128		634231	87	201097	80	33134	92	5130	20
50	64812	84	616048	83	181621	76	34427	93	3887	10
56 0	69496	85	597869	79	162149	72	35720	94	2632	0 4
10	74181	84	579693	76	142680	69	37013	94	1383	50
20	78865		561521	72	123214	66	38307	94	0133	40
30	83549		543352	69	103752	62	39600	93	8883	30
40	88234	85	525187	65	084293	59	40894	94	7633	20
50	92918	84	507025	61	064837	56	42188	94	6383	10
57 0	97602		488867	58	045385	52	43482	95	5132	0 3
10	102286		470712	55	025935	50	44777	95	3881	50
20	06970		452560	52	006488	47	46072	95	2630	40
30	11654	83	434412	48	987045	43	47367	96	1379	30
40	16337	84	416267	45	967604	41	48663	96	0127	20
50	21021		398126	41	948168	36	49958	95	8875	10
58 0	25705	83	379988	38	928734	34	51254	96	7624	51 0 2
10	30388	84	361853	35	909303	31	52550	96	6372	52 50
20	35072		343723	30	889876	27	53847	97	5119	53 40
30	39756		325596	27	870453	23	55143	96	3867	52 30
40	44439	83	307473	23	851033	20	56440	97	2614	53 10
50	49122	84	289353	20	831616	17	57737	97	1361	54 10
59 0	53806	83	271237	16	812203	13	59034	98	0107	54 0 1
10	58489		253124	13	792792	11	60332	98	8854	53 50
20	63172		235015	09	773386	06	61629	97	7600	54 40
30	67855	84	216909	06	753982	04	62927	98	6346	54 30
40	72539	83	198807	02	734582	00	64225	99	5092	54 20
50	77222		180708	00	715184	99	65524	99	3837	55 10
60	81905		162613	99	695790	98	66823	99	2583	54 0 0

Grad. 75.

S.M.

Grad. 15.

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M.S.	Sinns.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinns.	D.
0 0	15881905	82	162613	92	695790	91	3466823	1299	2583	50
10	86587	82	144521	92	676399	91	68122	1299	1328	50
20	91270	4683	126433	1808	657011	1918	67421	1300	0073	40
30	95953	82	108348	1808	637627	1918	70721	1300	8817	30
40	15900636	82	090267	78	618246	78	72021	1300	7561	20
50	05319	82	072189	74	598868	75	73321	1300	6306	10
1 0	10001	83	054115	70	579495	70	74622	1300	5050	059
10	14684	83	036045	67	560123	68	75921	1300	3794	50
20	19366	82	017978	64	540755	65	77223	1300	2537	40
30	24049	83	999914	60	521190	62	78524	1300	1280	30
40	28731	82	981854	57	502028	59	79826	1300	0023	20
50	33413	134	963797	54	482669	56	81128	1300	3766	10
2 0	38095	83	945743	50	463383	53	82430	1300	7509	58
10	42778	82	927693	46	443960	48	83733	1300	6251	50
20	47460	82	909647	43	424612	46	85035	1300	4993	40
30	52142	81	891604	39	405266	41	86338	1300	3735	30
40	56824	81	873565	36	385925	39	87640	1300	2477	20
50	61506	81	855529	32	366586	36	88943	1300	1218	10
3 0	66188	81	837497	29	347250	33	90247	1300	9960	58
10	70869	82	819468	25	327917	28	91551	1300	8701	59
20	75551	82	801443	22	308589	26	92854	1300	7441	50
30	80233	81	783421	18	289263	23	94158	1300	6182	40
40	84914	81	765403	15	269940	20	95463	1300	4922	30
50	89596	82	747388	12	250620	17	96768	1300	3662	20
4 0	94278	81	729376	08	231303	14	98073	1300	2402	10
10	98959	82	711368	05	211989	10	99379	1300	1142	056
20	16003640	82	693363	01	192679	07	3500684	1300	9881	50
30	08321	81	675362	01	173372	04	01990	1300	8621	40
40	13003	81	657364	1799	154068	01	03296	1300	7360	30
50	17684	81	639370	1	134767	01	04603	1300	6098	20
5 0	22365	81	621379	87	115470	7	05909	1300	4837	10
10	27046	81	603392	84	096176	4	07216	1300	3575	055
20	31727	81	585408	81	076885	1	08523	1300	2313	40
30	36408	81	567427	77	057596	89	09831	1300	1051	30
40	41089	81	549440	74	038312	84	11138	1300	9789	20
50	45770	81	531476	70	019030	78	12446	1300	8526	10
60	50451	81	513506	70	0999752	78	13754	1300	7263	054

Grad. 74.

S.M.

V

Grad. 15.

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M S	Sinus.	D.	Logarithb.	D.	Different.	D.	Logarithb.	D.	Sinus.	D.
6 0	16050451	81	135506	66	999752	75	3513754	09	7263	60
10	55132	81	495540	130	980477	75	15063	09	6000	50
20	59812	81	477577	63	961206	71	16371	08	4737	40
30	64493	80	459618	19	941933	68	17680	1309	3473	30
40	69173	81	441663	1795	922674	64	18989	10	2209	20
50	73854	80	423711	45	903413	59	20298	10	0945	10
7 0	78534	81	405762	45	884154	55	21608	10	9681	053
10	83215	81	387817	45	864899	55	22918	11	8417	50
20	87895	4680	369875	42	845647	52	24228	11	7152	40
30	92575	80	351936	39	826397	50	25539	10	5887	30
40	97255	81	334001	35	807152	45	26849	11	4622	20
50	101935	80	316069	32	787909	43	28160	11	3357	10
8 0	06615	79	298141	28	768670	39	29471	12	2091	052
10	11295	80	280216	25	749433	37	30783	12	0825	50
20	15975	81	262295	21	730201	32	32094	12	9555	40
30	20655	79	244377	18	710971	30	33406	12	8293	30
40	25335	80	226463	14	691745	26	34718	13	7027	20
50	30015	81	208552	11	672521	24	36031	12	5760	10
9 0	34694	80	190644	08	653301	17	37343	13	4493	051
10	39374	79	172740	04	634084	14	38651	13	3226	50
20	44053	80	154839	01	614870	14	39965	14	1958	40
30	48733	79	136941	04	595658	12	41282	14	0691	30
40	53411	80	119047	00	576451	07	42596	13	9423	20
50	58092	79	101157	87	557247	04	43910	14	8155	10
10 0	62771	75	083270	83	538046	01	45224	15	6887	050
10	67450	80	065387	80	518848	1919	46535	14	5618	50
20	72129	30	047507	77	499654	2	47853	15	4345	40
30	76809	79	029630	73	480462	88	49168	15	3080	30
40	81488	75	011757	70	461274	85	50483	16	1811	20
50	86167	131	993887	68	442085	82	51798	16	0542	10
11 0	90846	78	975021	63	422907	81	53114	16	9272	049
10	95524	25	958158	60	403729	78	54419	15	8002	50
20	100203	75	940298	56	384553	70	55745	16	6732	40
30	04882	78	922442	51	365381	72	57061	17	5462	30
40	09561	75	904590	49	346212	69	58378	17	4191	20
50	14239	78	886741	46	327046	66	59695	17	2920	10
60	18918	75	868895	44	307883	63	61012	17	1649	048

Grad. 74.

18. A

Grad. 15.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
12 0	26218918	78	868895	42	307883	109	3561012	17	1649	71	00
10	23596	79	851053	10	288724	7	62329	18	0378	71	30
20	28275	78	833214	106	269567	3	63647	17	9107	127	40
30	32953	79	815378	2	250414	50	64964	18	7835	127	30
40	37631	4678	797546	29	231264	47	66282	18	6563	120	20
50	42310	76	779717	26	212117	45	67600	19	5291	10	
13 0	46988	77	761891	22	192972	40	68919	18	4019	73	047
10	51666	77	744089	19	173832	38	70237	19	2746	50	
20	56344	78	726250	15	154694	34	71556	19	1473	40	
30	61022	77	708435	12	135560	32	72875	1320	0200	30	
40	65700	77	690623	08	116428	28	74195	0648	8927	74	
50	70378	77	672815	05	097300	25	75515	210	7653	73	10
14 0	75056	77	655010	01	078175	21	76835	21	6380	73	046
10	79734	77	637209	8	059054	19	78155	21	5106	75	50
20	84411	78	619415	4	039935	14	79476	20	3831	75	40
30	89089	77	601617	1	020821	12	80796	21	2557	74	30
40	93766	77	583826	87	001709	08	82117	21	1282	75	10
50	98444	78	566039	84	982601	06	83438	22	0007	75	10
15 0	10303121	77	548255	81	963495	02	84760	21	8732	76	045
10	07799	78	530474	78	944393	00	86081	22	7457	76	50
20	12476	77	512696	74	925293	6	87403	22	6181	76	40
30	17153	78	494922	70	906197	1009	88725	23	4906	75	10
40	21831	77	477152	67	887104	0	90048	23	3630	76	20
50	26508	77	459385	64	868014	87	91371	24	2353	72	10
16 0	31185	76	441621	61	848927	85	92694	24	1077	77	044
10	35862	76	423860	58	829842	81	94018	23	9800	77	50
20	40539	77	406102	54	810761	78	95341	24	8523	76	40
30	45216	76	388348	50	791683	74	96665	24	7146	73	30
40	49893	77	370598	47	772609	71	97989	25	5969	78	20
50	54569	77	352851	44	753538	69	99313	25	4694	78	10
17 0	59246	76	335107	40	734469	64	3600638	24	3413	79	043
10	63923	77	317367	37	715405	62	01962	25	2135	79	50
20	68599	78	299630	34	696343	59	01287	26	0857	79	40
30	73276	76	281896	30	677284	56	04612	26	9579	79	30
40	77952	77	264166	26	658228	52	05938	27	8300	79	20
50	82629	76	246440	23	639176	50	07264	27	7021	79	10
60	87305	76	228717		620126		08591		5742		042

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f. S.	Sinus.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus.	D.
0	16387305	76	133	228717	129	6	3608591	16	5742	60
10	91981			210997	177	1904	09917	1645	4462	50
20	96657	77		193280	171	4	11244	1327	3183	40
30	26401334	+		175566	0	37	12571	28	1903	30
40	06010	770		157856	06	34	13898	28	0623	20
50	10686			140150	03	30	15225	28	9343	10
0	15322	75		122447	00	28	16553	28	8062	04
10	20038			104747	176	25	17881	29	6781	50
20	24713	76		087050	176	23	19209	29	5500	40
30	29389			069356	0	18	20538	28	4219	30
40	34065	75		051666	36	15	21866	29	2938	20
50	38741	76		033980	83	13	23195	30	1656	10
0	43416	76		016297	80	09	24525	29	0374	040
10	48092	75		998617	76	06	25854	30	9092	50
20	52767	76		980941	73	06	27184	30	7810	40
30	57443	75		963268	70	01	28514	31	6527	30
40	62118			945598	66	07	29845		5244	20
50	66793			927932	63	1899	31176		3961	10
0	71468	76		910269	60	89	32507		2678	039
10	76144	75		892609	57	84	33838	31	1394	50
20	80819			874952	53	82	35170	31	0111	40
30	85494			857299	50	81	36501	32	8827	30
40	90169	74		839649	46	78	37833	32	7543	20
50	94844	75		822003	43	76	39165	33	6258	10
0	99518			804360	40	72	40498	32	4974	038
10	26504193	74		786720	37	70	41830	33	3689	50
20	08868			769083	33	66	43163	34	2404	40
30	13543	74		751450	29	63	44496	34	1118	86
40	18217	75		733821	26	60	45830	35	9833	85
50	22892	74		716155	23	57	47164	35	8547	86
0	27566			698572	19	54	48498	35	7261	037
10	32241	75		680953	16	50	49833	34	5975	50
20	36925	74		663337	13	48	51167	35	4688	40
30	41589			645724	09	45	52502	34	3402	30
40	46263	75		628115	06	43	53836	35	2115	20
50	50938	74		610509	03	38	55171		0828	10
60	55612			592906			56506		09540	036

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
24 0	16555612	4674	592906	132	936400	36	3656506	36	9540	87	60
10	60286		575306	96	917464	31	57842	35	8253	12	50
20	64960		557710	93	898533	1892	59177	36	6965	1288	40
30	69634	73	540117	1756	879804	5	60513	1337	5677	88	30
40	74307	74	522528	3	860679	3	61840	37	4389	89	20
50	78981		404942	79	841756	20	63186	38	3100	88	10
25 0	83655		487359	76	822836	16	64523	38	1812	89	035
10	88329	73	469780	73	803920	14	65860	37	0523	90	50
20	93002	74	452204	69	785006	10	67198	38	9234	90	40
30	97676	73	434631	66	766096	07	68535	37	7944	89	30
40	16602349	74	417062	63	747189	04	69873	38	6655	90	20
50	07023	73	399496	59	728285	01	71211	39	5365	91	10
26 0	11696		381933	56	709384	8	72549	39	4075	91	034
10	16369	74	364374	53	690486	4	73888	38	2784	90	50
20	21043	73	346818	49	671592	2	75226	39	1494	91	40
30	25716		329265	46	652700	88	76565	40	0223	92	30
40	30389		311716	43	633812	86	77904	40	8912	92	20
50	35062		294170	40	614926	82	79344	41	7621	93	10
27 0	39735		276627	36	596044	80	80583	41	6330	92	033
10	44408	72	259087	33	577164	76	81923	40	5038	90	40
20	49081	73	241551	30	558288	74	83263	41	3746	91	30
30	53753	73	224018	26	539414	70	84604	41	2454	93	20
40	58426		206488	22	520544	67	85944	40	1162	94	10
50	63099	72	188962	18	501677	63	87285	41	9869	95	032
28 0	67771	73	171440	15	482814	60	88626	42	8576	96	50
10	72444	72	153922	12	463954	56	89968	41	7283	94	40
20	77116	73	136407	08	445098	54	91309	42	5990	95	30
30	81789	72	118895	06	426244	50	92651	43	4697	96	20
40	86461		101387	03	407394	48	93993	43	3403	97	10
50	91133	73	083881	00	388546	46	95335	44	2109	98	031
29 0	95806	72	066378	00	369700	43	96678	44	0815	99	50
10	16700478		048878	00	350857	41	98021	43	99521	99	40
20	05150		031381	00	332016	37	99365	44	8226	99	30
30	09822		013887	00	313179	36	3700708	44	6931	99	20
40	14494	131	996395	00	294343	32	08052	44	5636	99	10
50	19166		978907	00	275511	29	03396		4341	96	030
60	23838		961422	00	256682		04740		3045		

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
30 0	26723838	71	961422	8	256682	25	3704740	1345	963045	95
10	28509	71	943942	128	237857	22	06085	46	1750	96
20	33181	72	926465	1747	219035	1891	07430	45	0454	97
30	37853	71	908991	67	200216	10	08775	46	963157	97
40	42524	72	891521	61	181400	07	10121	47	7861	98
50	47196	71	874054	57	162588	04	11466	45	6564	96
31 0	51867	72	856590	54	143778	00	12812	46	5268	97
10	56539	71	839129	50	124971	1879	14158	47	3971	98
20	61210	72	821672	47	106167	2	15505	46	2673	97
30	65881	71	804218	44	087367	1879	16851	47	1376	1298
40	70553	72	786768	41	068570	88	18198	47	0078	1298
50	75224	71	769311	38	049776	86	1954	48	8780	1298
32 0	79895	72	751877	35	030984	83	20893	48	7482	99
10	84566	71	734436	31	012196	80	22240	47	6183	98
20	89237	72	716998	28	993410	77	23588	48	4885	98
30	93908	71	699563	24	974627	73	24936	49	3586	99
40	98579	72	682131	21	955847	71	26285	50	2287	1300
50	16803249	71	664704	18	937070	67	27634	49	0988	1300
33 0	07920	72	647280	15	918297	65	28983	50	9688	027
10	12591	71	629859	11	899526	62	30333	49	8388	50
20	17261	72	612441	8	880759	60	31682	49	7088	40
30	21932	71	595026	4	861994	58	33032	50	5788	30
40	26602	72	577615	0	843234	55	34381	49	4487	20
50	31273	71	560207	0	824476	52	35731	51	3186	10
34 0	35943	72	542803	0	805721	50	37082	51	1885	026
10	40613	71	525402	0	786965	48	38433	50	0584	50
20	45283	72	508004	0	768220	45	39784	49	9283	40
30	49954	71	490610	0	749475	43	41135	52	7981	30
40	54624	72	473218	0	730731	40	42487	51	6679	20
50	59294	71	455829	0	711991	38	43838	52	5377	10
35 0	63964	72	438443	0	693253	36	45190	53	4075	025
10	68634	71	421061	0	674519	34	46542	53	2773	50
20	73303	72	403682	0	655787	32	47895	52	1470	40
30	77973	71	386306	0	637059	30	49247	53	0167	30
40	82643	72	368934	0	618334	28	50600	53	8864	20
50	87312	71	351565	0	599612	26	51953	54	7560	10
60	91982	72	334200	0	580893	24	53307	54	6257	03

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M.S	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
36°	26891982	70	334200	62	580893	16	3753307	135	6257	60
10	96652	69	316838	5	562177	11	546661	9631	4953	50
20	26901321	69	299480	1735	543465	9	56015	4	3649	40
30	05990	70	282125	3	524756	1870	57369	55	2344	30
40	10660	4669	264772	50	506048	8	58724	55	1040	20
50	15329	69	247422	47	487344	4	60078	54	9735	10
37°	19998	69	230075	43	468642	01	61433	55	8430	023
10	24667	68	212732	40	449944	1869	62788	56	7125	50
20	29336	69	195392	37	431248	2	64144	55	5819	40
30	34005	68	178055	33	412556	89	65499	56	4514	30
40	38674	69	160722	30	393867	86	66855	56	3208	20
50	43343	68	143392	26	375181	83	68211	57	1902	10
38°	48012	68	126066	23	356498	79	69568	57	0595	022
10	52681	69	108743	20	337819	77	70924	56	9289	50
20	57349	68	091423	17	319142	74	72281	57	7982	40
30	62018	69	074106	15	300468	73	73638	58	6675	30
40	66687	68	056791	11	28795	69	74996	58	5368	20
50	71355	69	039480	08	263126	67	76354	59	4060	10
39°	76024	68	022172	05	244459	63	77713	58	2752	021
10	80692	69	004867	02	281796	61	79071	59	1444	50
20	85360	68	987565	1729	207135	57	80430	59	0136	40
30	90029	68	970267	8	188478	53	81789	60	8828	30
40	94697	69	952973	4	169835	51	83148	60	7519	20
50	99365	68	935682	88	151174	47	84508	61	6210	10
40°	17004033	67	918394	85	132527	45	85867	59	4901	020
10	08701	68	901109	81	113882	41	87227	60	3592	50
20	13369	67	883828	78	095241	39	88587	61	2282	40
30	18037	68	866550	75	076602	35	89948	61	0973	30
40	22704	67	849275	72	057967	33	91308	60	9663	20
50	27372	68	832003	68	039334	29	92669	61	8352	10
41°	32040	67	814735	65	020705	27	94030	62	7042	019
10	36707	68	797470	61	002078	22	95392	61	5731	50
20	41375	67	780209	58	983456	20	96753	62	4420	40
30	46043	68	762951	56	964836	18	98115	61	3109	30
40	50710	67	745695	53	946218	15	99477	63	1798	20
50	55377	68	728442	50	927603	13	2800839	63	0486	10
60	60045	67	711192	47	908950	11	02102	63	69175	018

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 0	27060045	4667	711192	1726	908990	1808	3802202	62	9618	60
10	64712		693946	126	890382	1806	03564	62	7863	50
20	69379		676703	123	871776	1803	04927	63	6550	40
30	74046		659463	120	853173	1800	06290	64	5238	30
40	78713		642227	36	834573	1800	07654	64	3925	20
50	83380		624994	33	815976	1807	09018	65	2612	10
43 0	88047		607765	29		1804		65		
10	92714		590539	26	797382	1804	10383	64	1299	017
20	97381		573316	23	778792	88	11747	64	9986	50
		66		20	760204	85	13112	1365	8672	40
30	27102047	67	556096	18	741619	83	14477	66	7358	30
40	06714		538878	15	723036	81	15842	66	6044	20
50	11381		521663	12	704455	77	17208	66	4730	10
44 0	16047		504451	09	685878	75	18575	66	3415	016
10	20714		487242	05	667303	71	19939	67	2103	50
20	25380		470037	02	648732	69	21305	67	0786	40
30	30046		451835	17	630163	65	22672	66	9471	30
40	34713		435636	15	611598	62	24038	67	8155	20
50	39379		418441	12	593036	59	25405	67	6840	10
45 0	44045		401249	89	574477	57	26772	68	5524	015
10	48711		384060	86	555920	53	28140	67	4208	50
20	53377		366874	83	537367	51	29507	68	2891	40
30	58043		349691	80	518816	48	30875	69	1575	30
40	62709		332511	77	500268	45	32243	69	0258	20
50	67375		315334	73	481723	42	33611	69	8941	10
46 0	72041		298161	70	463181	39	34980	70	7624	014
10	76706		280991	67	444642	37	36349	70	6306	50
20	81372		263824	63	426105	32	37719	69	4989	40
30	86037		246661	60	407573	30	39088	70	3671	30
40	90703		229501	57	389043	27	40458	70	2353	20
50	95368		212344	53	370516	23	41828	71	1034	10
47 0	27200034		195191	50	351993	21	43198	71	9716	013
10	04699		178041	47	333472	17	44569	70	8397	50
20	09364		160894	44	314955	15	45939	71	7078	40
30	14030		143750	40	296440	11	47310	71	5758	30
40	18695		126610	37	277929	09	48681	72	4439	20
50	23360		109473	33	259420	05	50053	72	3119	10
60	28025		092340		240915		51425		1799	012

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D	Logarith.	D.	Sinus.	D
48 0	27218025	65	092340	30	246915	180	385145	72	1799	60
10	32690	130	075210	7	221413	180	52797	73	0479	50
20	37355	64	058083	1712	201913	180	54170	71	9159	40
30	42019	65	040959	1	185417	180	55542	71	7838	30
40	46684	65	023837	19	166922	180	56915	73	6517	20
50	51349	64	006718	16	148430	89	58288	73	5196	10
49 0	56013	65	989602	13	129941	87	59661	74	3875	0 11
10	60678	64	972489	09	111454	82	61035	73	2553	50
20	65342	65	955380	06	092972	80	62408	74	1232	40
30	70007	64	938274	03	074492	77	63782	74	9910	30
40	74671	65	921171	09	056015	74	65156	75	8588	20
50	79335	64	904072	1709	037541	71	66531	75	7265	10
50 0	84000	466	886976	3	019070	68	67906	76	5942	0 10
10	88664	4	869883	90	000602	66	69281	76	4619	50
20	93328	4	852793	87	982136	61	70657	75	3296	40
30	97992	63	835706	84	963674	60	72032	76	1973	30
40	102656	64	818622	81	945214	57	73408	76	0650	20
50	107320	63	801541	78	926757	54	74784	77	9326	10
51 0	111984	63	784463	74	908303	51	76160	77	8002	0 9
10	16647	64	767389	71	889852	47	77537	76	6678	50
20	21311	63	750318	69	871405	46	78913	77	5353	40
30	25975	63	733249	65	852959	42	80290	78	4028	30
40	30638	64	716184	62	834517	40	81667	78	2703	20
50	35302	63	699122	59	816077	37	83045	78	1378	10
52 0	39965	64	682063	55	797640	33	84423	75	0053	0 8
10	44629	63	665008	52	779207	31	85801	75	8727	50
20	49292	64	647956	49	760776	27	87180	75	7401	40
30	53955	63	630907	46	742349	25	88558	75	6075	30
40	58618	64	613861	44	723924	23	89937	79	4749	20
50	63282	63	596817	40	705501	19	91316	80	3423	10
53 0	67945	62	579777	36	687082	16	92695	80	2096	0 7
10	72608	63	562741	33	668666	12	94075	79	0769	50
20	77271	64	545708	30	650254	10	95454	80	9442	40
30	81934	63	528678	27	631844	07	96834	79	8115	30
40	86596	62	511651	25	613437	06	98214	79	6787	20
50	91259	61	494626	22	595031	03	99595	79	5459	10
60	95922	60	477604	19	576628	03	3900976	79	4131	0 6

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
14 0	27395922	62	477604	9	576628	00	3900976	81	9617	60
10	27400584	63	4460585	10	558218	18	02357	82	2803	50
20	05247		443570	11	539831	37	03739	83	1474	40
30	09910		426588	12	521438	56	05120	84	0145	30
40	14572	62	409550	08	503048	75	06502	85	9616	20
50	19234		392545	09	484661	94	07884	86	7487	10
55 0	23897	63	375543	10	466277	82	09266	87	6158	0
10	28559		358544	11	447895	78	10649	88	4828	50
20	33221		341548	12	429517	56	12031	89	3498	40
30	37883		324555	13	411141	34	13414	90	2168	30
40	4254	62	307566	14	392769	12	14797	91	0838	20
50	4720		290579	15	374398	00	16181	92	9507	10
56 0	5186	63	273595	16	356030	68	17565	93	8176	0
10	56531		256615	17	337666	46	18945	94	6845	50
20	61193		239638	18	319304	24	20324	95	5514	40
30	65854	61	222664	19	300946	02	21718	96	4183	30
40	70516	62	205693	20	282590	40	23103	97	2851	20
50	75178		188725	21	264237	18	24488	98	1515	10
57 0	79835	61	171761	22	245888	49	25873	99	0187	0
10	84501	62	154800	23	227541	27	27255	00	8855	50
20	89162		137842	24	209198	05	28642	01	7522	40
30	93823	62	120887	25	190857	41	30031	02	6185	30
40	98485	63	103934	26	172518	19	31411	03	4851	20
50	17503146		086984	27	154181	37	32803	04	3523	10
58 0	07807	61	070038	28	135848	35	34190	05	2185	0
10	12468		053095	29	117518	13	35577	06	0851	50
20	17125		036156	30	099191	01	36965	07	9522	40
30	21790	62	019220	31	080868	22	38352	08	8187	30
40	26451		002286	32	062541	00	39740	09	6853	20
50	31112	63	985355	33	044225	16	41128	10	5518	10
59 0	35772	61	968427	34	025911	13	42516	11	4183	0
10	40433		951503	35	007598	09	43905	12	2848	50
20	45094	62	934582	36	989285	07	45293	13	1513	40
30	49755		917664	37	970982	04	46682	14	0178	30
40	54415	63	900749	38	952678	02	48071	15	8843	20
50	59075		883837	39	934376	00	49461	16	7506	10
60	63736	61	866928	40	916077	05	50851	17	6170	0

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	27563736	4660	866918	160	916077	96	3950851	90	6170	60
10	68396		850021	124	897781	93	52241	90	4833	50
20	73056		833120	109	879488	93	53632	91	3496	40
30	77716		816221	97	861199	88	55022	90	2159	30
40	82376		799324	80	841911	85	56413	1391	0822	20
50	87036		782430	64	824626	81	57804	9611	9485	10
1	91696		765540	90	806345	75	59195	92	8148	38
10	96356		748653	87	788066	75	60587	92	6810	50
20	27601016		731769	84	779791	73	61978	91	5472	40
30	95676	59	714888	81	751518	71	63370	92	4133	30
40	10336	60	698010	78	733247	68	64763	93	2795	20
50	14995	59	681135	71	714979	64	66156	92	1456	10
2	19655	59	664264	68	696715	62	67549	94	0117	058
10	24314	60	647396	65	678453	58	68943	93	8778	50
20	28974	59	630531	61	660195	56	70336	93	7435	40
30	33633	60	613669	60	641939	54	71730	94	6095	30
40	38293	59	596809	57	623685	51	73124	95	4755	20
50	42952		579952	54	605434	49	74518	95	3415	10
3	47611		563098	50	587185	45	75913	96	2075	057
10	52270		546248	47	568940	43	77308	96	0735	50
20	56929		529401	44	550697	39	78704	95	9398	40
30	61588		512557	43	532458	38	80095	96	8057	30
40	66247		495715	39	514220	35	81495	96	6716	20
50	70906		478876	35	495985	31	82891	95	5374	10
4	75565	58	462041	32	477754	29	84287	97	4033	056
10	80223	59	445209	29	459525	25	85684	96	2691	50
20	84882		428380	26	441300	23	87080	97	1349	40
30	89541	58	411554	24	423077	22	88477	98	0006	30
40	94199	59	394730	20	404855	18	89875	98	8664	20
50	98858	58	377910	17	386637	15	91273	96	7321	10
5	27703546	59	361093	14	368422	12	92671	97	5978	055
10	08175	58	344279	11	350210	10	94069	98	4635	50
20	12833		327468	08	332000	06	95468	98	3291	40
30	17491		310660	05	313794	04	96866	99	1948	30
40	22149		293855	02	295590	01	98265	99	0604	20
50	26807		277053	01	277389	98	99664	9607	9260	10
60	31465		260254	1679	259191		4001063		7915	054

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[S.M.]

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6 0	27731465	4658	128	260254	1670	114	4001063	1400	7915	60
10	36123			243458	1673	114	02463	9607	6571	44
20	49781			226665	1670	0	03363	1400	5226	40
30	45439			209875	86	204612	87	05263	3881	30
40	50397			193089	83	186425	84	06664	2536	20
50	53754	57		176306	78	166241	80	08065	1190	10
7 0	59412	58		159527	74	150061		09466	9845	48
10	64070			142750	77	131883	78	10867	8499	46
20	63727	57		125976	74	113707	76	12269	7153	40
30	73385	57		109205	71	095535	72	13670	5806	47
40	78042			092437	68	077365	70	15072	4406	46
50	82699	58		075672	65	059198	67	16474	3113	47
8 0	87357	58		058910	62	041033	65	17877	1761	48
10	92014	57		042152	58	022873	60	19279	0418	48
20	96671			025397	55	004715	58	20682	5071	47
30	7801328			008644	53	986554	56	22085	7723	48
40	05985			991894	50	968405	54	23485	6375	45
50	10642	127		975147	47	950254	51	24892	5027	40
9 0	15299	56		958203	44	932101	42	26292	3679	45
10	19955			944663	40	913961	43	27705	2335	50
20	24611	57		924926	37	895820	41	29101	0981	40
30	29269			908191	35	877680	40	30511	9632	30
40	33925	56		891455	32	859544	37	31911	8283	20
50	38582	56		874710	29	841405	34	33321	6933	50
10 0	43238	57		858005	26	823278	31	34721	5583	050
10	47895			841283	22	805151	27	36132	4233	50
20	52551	56		824564	19	787026	25	37538	2883	40
30	57207			807843	16	768904	22	38944	1533	30
40	61863			791134	13	750783	21	40351	0182	51
50	66520	57		774421	11	732660	18	41758	8831	10
11 0	71176	56		757716	08	714550	15	43166	7480	049
10	75832			741012	05	696435	11	44573	6129	50
20	80488			724311	03	678330	10	45981	4777	52
30	85143	56		707611	01	660224	07	47389	3425	30
40	89798			690915	00	642120	04	48757	2073	20
50	94453			674225	00	624019	01	50206	0723	10
60	99111			657536	00	605922	00	51614	29369	048

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
12 0	27899111	55	657536	6	605912	5	4051614	09	9369	60
10	27903766	55	640850	1663	587827	2	53023	09	8016	50
20	08422	56	614167	1668	569735	0	54432	10	6663	40
30	13077	55	607487	76	551645	85	55842	09	5310	30
40	17733	590811	574138	73	533560	83	57251	10	3986	20
50	22388	425	574138	69	515477	78	58661	09	2603	10
13 0	27043	55	557469	67	497399	77	60070	10	1249	047
10	31698	56	540802	64	479322	75	61480	11	9895	50
20	36354	53	524138	61	461247	71	62891	10	8541	40
30	41009	55	507477	59	443176	70	64301	11	7186	30
40	45664	490818	490818	56	425106	67	65712	12	5831	20
50	50319	474162	474162	52	407039	64	67123	12	4476	10
14 0	54974	54	457510	49	388975	60	68335	11	3121	046
10	59628	55	440861	46	370915	58	69946	12	1766	50
20	64283	54	424215	43	352857	55	71358	13	0410	40
30	68938	54	407572	41	334802	54	72770	14	9054	30
40	73592	55	390931	38	316748	51	74183	15	7698	20
50	78247	54	374293	34	298697	47	75596	16	6342	10
15 0	82901	55	357659	31	280650	44	77009	17	4985	045
10	87556	54	341028	28	262606	42	78422	18	3629	50
20	92110	55	324400	25	244564	38	79836	19	2172	40
30	96864	55	307775	23	226526	36	81249	20	0914	30
40	1001519	54	291152	20	208490	34	82662	21	9557	20
50	06173	55	274532	16	190456	31	84076	22	8199	10
16 0	10827	55	257916	14	172425	28	85491	23	6841	044
10	15481	54	241302	10	154397	24	86905	24	5483	50
20	20135	55	224692	07	136373	22	88319	25	4125	40
30	24789	55	208085	05	118351	21	89734	26	2766	30
40	29443	54	191480	02	100330	18	91150	27	1408	20
50	34097	55	174878	00	082312	16	92566	28	0049	10
17 0	38751	53	158279	00	064296	12	93983	29	8889	043
10	43404	54	141683	00	046284	09	95399	30	7330	50
20	48057	55	125091	89	028275	05	96816	31	5970	40
30	52711	53	108502	87	010270	04	98232	32	4610	30
40	57364	54	091915	84	992266	01	99649	33	3250	20
50	62018	53	075331	80	974265	00	101066	34	1890	10
60	66671	53	058751	80	956267	00	02484	35	0529	042

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S.M.

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f. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
8 0	28066671	4653	0587551	127	956267	95	4101484	1418	805129	60
10	71324		042174	1657	938272	92	03902	1418	9168	50
20	75977		035600	1657	920280	92	05320	1418	7807	40
30	80630		009029	69	902291	99	06738	1418	6446	30
40	85283		992460	66	884303	80	08157	1418	5085	20
50	89936		975894	64	866319	74	09575	1418	3723	10
9 0	94589		959330	60	848336	83	10994	1418	2361	041
10	99242		942770	57	830356	80	12414	1418	0999	50
20	18103895		926213	54	812380	76	13833	1418	9636	40
30	08548	52	909659	51	794406	72	15253	1418	8274	30
40	13200	52	893107	49	776434	69	16673	1418	6911	20
50	17853	52	876558	45	758465	66	18093	1418	5548	10
0 0	22505	52	860013	41	740499	63	19514	1418	4184	040
10	27158	52	843471	39	722536	61	20935	1418	2821	50
20	31810	52	826932	36	704575	57	22357	1418	1457	40
30	36462	52	810396	34	686618	56	23778	1418	0093	30
40	41115	52	793862	31	668662	53	25200	1418	8719	20
50	45767	52	777331	27	650709	49	26622	1418	7365	10
1 0	50419		760804	24	632760	47	28044	1418	6000	039
10	55071		744280	21	614813	44	29467	1418	4635	50
20	59723		727759	18	596870	41	30889	1418	3270	40
30	64375		711241	16	578929	39	32312	1418	1905	30
40	69027		694725	13	560990	37	33735	1418	0539	20
50	73679		678212	10	543053	34	35159	1418	9173	10
2 0	78330	51	661702	07	525119	31	36583	1418	7807	038
10	82982	51	645195	03	507188	28	38007	1418	6441	50
20	87634	51	628692	00	489260	24	39432	1418	5074	40
30	92285	51	612192	8	471336	21	40856	1418	3708	30
40	96936	51	595694	1649	453413	18	42281	1418	2341	20
50	28201588	51	579199	2	435493	17	43706	1418	0974	10
3 0	06239		562707	89	417576	15	45131	1418	9606	037
10	10890		546218	86	399661	11	46557	1418	8239	50
20	15542		529732	83	381750	9	47982	1418	6871	40
30	20193		513249	81	363841	7	49408	1418	5503	30
40	24844		496768	77	345934	5	50834	1418	4135	20
50	29495		480291	74	328030	4	52261	1418	2766	10
60	34146		463817		310129	01	53688	1418	1397	036

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
24 0	28234146	51	463817	71	310129	1789	4153688	27	1397	60
10	38797	50	447346	168	292231	6	55115	28	0028	59
10	43447	51	430878	1646	274335	2	56543	27	8659	40
30	48098	50	414413	5	256443	91	57970	1412	7290	30
40	51749	51	397950	3	238552	87	59398	1412	5920	20
50	57399	51	381491	59	220665	84	60826	29	4550	10
25 0	62050	50	365035	56	202781	82	62254	29	3180	035
10	66700	51	348582	53	184899	78	63683	28	1810	50
20	71351	4650	332132	50	167021	76	65111	25	0440	40
30	76001	51	315685	47	149145	73	66540	30	9069	30
40	80651	50	299241	44	131272	72	67969	30	7698	20
50	85301	51	282799	42	113400	69	69399	30	6327	10
26 0	89952	50	266360	39	095531	66	70829	31	4955	034
10	94602	49	249924	36	077665	64	72259	31	3584	50
20	99252	50	233491	33	059801	60	73690	30	2212	40
30	103901	51	217061	30	041941	59	75120	31	0840	30
40	08551	50	200633	28	024082	57	76551	31	9467	20
50	13201	49	184209	24	006227	55	77982	30	8095	10
27 0	17851	50	167788	21	988375	52	79413	32	6722	033
10	22501	49	151369	19	970524	51	80845	31	5349	50
20	27150	50	134953	16	952677	47	82276	32	3976	40
30	31800	49	118541	12	934833	44	83708	33	2602	30
40	36449	50	102131	10	916991	42	85140	33	1229	20
50	41098	51	085724	07	899157	40	86573	33	9855	10
28 0	45748	50	069320	04	881314	37	88006	34	8481	032
10	50397	49	052919	01	863480	34	89439	34	7106	50
20	55045	50	036521	1639	845648	32	90873	33	5732	40
30	59695	51	020126	5	827820	28	92306	33	4357	30
40	64344	125	003733	3	809993	27	93740	34	2982	20
50	68993	125	987343	90	792169	24	95174	34	1607	10
29 0	73642	125	970957	86	774349	20	96608	35	0231	031
10	78291	48	954573	84	756530	19	98043	35	8855	50
20	82940	49	938193	80	738715	18	99478	35	7479	40
30	87589	48	921816	77	720903	11	4200913	36	6103	30
40	92237	49	905441	75	703092	07	02349	35	4727	20
50	96886	48	889069	72	685285	05	03784	36	3350	10
60	101534	48	872700	69	667480	05	05220	36	1973	030

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
30	0 28401534	49	125 872700	66	667480	1780	4205220	36	95889587	1377
10	06183	48	856334	63	649678	0	06656	37	0596	90
20	10831	49	839971	60	631878	2	08093	36	9219	40
30	15480	46	823612	57	614083	5	09529	37	7842	30
40	20128	45	807255	54	596289	4	10966	38	6464	20
50	24776	44	790901	51	578498	3	12403	39	5086	10
31	0 29424	43	774550	48	560709	89	13841	38	3703	029
10	34072	42	758202	45	542924	83	15278	37	2324	79
20	38720	41	741857	42	525141	83	16716	38	0952	78
30	43368	40	725515	40	507361	80	18154	39	9572	79
40	48016	37	709175	37	489582	79	19593	40	8193	30
50	52664	33	692838	33	471806	76	21032	40	6813	20
32	0 57312	47	676509	31	454033	73	22472	39	5434	10
10	61959	48	660174	28	436263	70	23911	39	4054	028
20	66607	47	643846	25	418495	68	25351	40	2674	50
30	71254	48	627521	22	400731	64	26790	39	1294	40
40	75902	47	611199	19	382969	61	28230	40	0912	30
50	80549	48	594880	16	365210	59	29670	41	8533	20
33	0 85196	47	578564	13	347453	57	31111	41	7122	10
10	89844	46	562251	10	329699	54	32552	42	5771	027
20	94491	45	545941	07	311948	51	33993	43	4390	50
30	99138	44	529634	05	294200	48	35434	44	3008	40
40	103785	43	513329	02	276453	47	36876	45	1624	30
50	08432	42	497027	00	258710	43	38317	46	0244	20
34	0 13079	41	480729	00	240970	40	39759	47	8862	10
10	17726	40	464433	00	223231	39	41202	48	7479	026
20	22373	39	448140	00	205496	35	42644	49	6097	50
30	27019	38	431850	00	187763	33	44087	50	4714	40
40	31666	37	415562	00	170032	31	45530	51	3331	30
50	36313	36	399278	00	152305	27	46973	52	1947	20
35	0 40959	35	382997	00	134580	25	48417	53	0564	10
10	45606	34	366718	00	116858	21	49860	54	9180	025
20	50252	33	350442	00	099138	20	51304	55	7796	50
30	54898	32	334169	00	081421	17	52748	56	6412	40
40	59544	31	317899	00	063706	15	54193	57	5023	30
50	64191	30	301632	00	045994	12	55638	58	3642	20
60	68837	29	285368	00	028284	10	57084	59	2257	10

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M. S.	Sinas.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinas.	D.	
36	28568837	4646	125 285368	61	11.110 028284	6	4257084	45	95839582 2257	85	00
10	73483		269107	1625	010578	170	58529	45	0892	85	50
20	78129		252848	1625	992873	2	59075	1446	9487	108	40
30	82775		236592	3	975171	9	61421	46	8102	108	30
40	87421		220339	3	957472	7	62867		6715	108	20
50	92066	45	204089	50	930775	4	64314	47	5329	10	10
37	96712	46	187842	47	922081	91	65761		3943		023
10	18601358	45	171598	44	904390	89	67208	48	2557	87	50
20	06003	45	155357	41	886701	85	68656	47	1170	87	40
30	10649	46	139119	38	869016	83	70103	48	9783	88	30
40	15194	45	122884	35	851333	81	71551	48	8396	88	20
50	19940	46	106651	33	833652	78	72999	49	7008	88	10
38	24585	45	090421	30	815974	76	74447	49	5621	87	022
10	29230		074194	27	798298	72	75856	48	4233	88	50
20	33875		057970	24	780616	70	77344	49	2845	89	40
30	38520		041749	21	762956	67	78793	50	1456	89	30
40	43165		025531	18	745289	65	80242	50	0068	88	20
50	47810		009316	15	727624	62	81692	50	8679	89	10
39	52455	44	993104	12	709962	59	83142	51	7290	90	021
10	57100	44	976895	09	692303	57	84592	51	5902	90	50
20	61741	44	960685	06	674646	54	86043	50	4511	89	40
30	66390	44	944485	04	656992	53	87493	51	3122	89	30
40	71034	45	928283	02	639339	50	88944	51	1732	90	20
50	75679	44	912084	0	621689	47	90395	52	0342	91	10
40	80323	45	895888	0	604042	45	91846	52	8951	91	020
10	84968	44	879695	3	586397	41	93298	51	7561	90	50
20	89612	44	863505	90	568756	39	94749	52	6170	91	40
30	94256	45	847318	87	551117	36	96201	53	4774	92	30
40	98901	44	831134	84	533481	33	97653	53	3388	92	20
50	28703545	44	814954	80	515848	30	99106	54	1996	92	10
41	08189		798777	77	498248	28	4300559		0604		019
10	12833		782602	75	480590	26	02012	54	9212		50
20	17477		766430	72	462964	22	03466	53	7820		40
30	22121		750261	69	445342	21	04919	54	6428		30
40	26765		734094	67	427721	18	06373		5035		20
50	31408	43	717930	64	410103	16	07827		3642		10
60	36052	44	701768	62	392487		09281		2249		018

Grad. 73.

S. A.

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Grad. 16.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 0	28736052	44	701768	1615	392487	14	4309281	59	95789517	93
10	40696	43	685609	6	374873	10	10736	54	0856	50
20	45339	44	669453	3	357263	8	12190	55	9463	40
30	49983	43	653300	49	339655	1760	13645	56	8069	30
40	54626	44	637151	46	322051	2	15100	1456	6675	20
50	59269	43	621005	44	304449	00	16556	57	5281	10
43 0	63913	44	604861	41	286849	1759	18012	58	3886	017
10	68556	43	588720	38	269252	7	19468	57	2493	50
20	73199	44	572582	35	251657	5	20925	56	1097	40
30	77842	43	556447	33	234066	90	22381	55	9702	30
40	82485	44	540314	30	216476	87	23838	54	8307	20
50	87128	43	524184	27	198885	85	25295	53	6911	10
44 0	91771	44	508057	24	181304	81	26753	52	5515	016
10	96414	43	491933	22	163723	80	28210	51	4111	50
20	28801057	44	475811	19	146142	77	29668	50	2723	40
30	05699	43	459692	15	128566	74	31126	49	1327	30
40	10342	44	443577	12	110992	71	32585	48	9930	20
50	14984	43	427465	09	093421	68	34044	47	8533	10
45 0	19627	44	411356	06	075853	66	35503	46	7136	015
10	24269	43	395253	04	058287	63	36963	45	5735	50
20	28912	44	379146	01	040724	61	38422	44	4341	40
30	33554	43	363045	59	023163	58	39881	43	2943	30
40	38196	44	346946	56	005605	56	4134	42	1545	20
50	42838	43	330850	54	988045	54	42801	41	0147	10
46 0	47480	44	314757	51	970495	51	44262	40	8745	014
10	52112	43	298666	48	952944	49	45722	39	7350	50
20	56764	44	282575	45	935395	46	47183	38	5951	40
30	61406	43	266493	43	917845	43	48644	37	4552	30
40	66048	44	250412	40	900306	40	50106	36	3153	20
50	70690	43	234334	37	882766	37	51568	35	1753	10
47 0	75331	44	218255	35	865227	35	53031	34	0353	013
10	79973	43	202185	32	847692	32	54493	33	8953	50
20	84614	44	186114	30	830155	31	55956	32	7553	40
30	89256	43	170046	28	812627	28	57419	31	6153	30
40	93897	44	153981	26	795092	26	58882	30	4752	20
50	98538	43	137919	23	777573	23	60346	29	3351	10
60	28903180	44	121859	21	760050	21	61809	28	1950	012

Grad. 73.

J.S.M.

Grad. 16.

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M. S.	Sinus.	D. Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48 0	38903180	121859	124	760050	21	4161809	64	1950	0 00
10	07811	1205801	160	742519	17	63273	64	0548	0 10
20	12461	089747	160	715010	17	64737	65	9747	0 20
30	17101	073695	48	707493	17	66202	65	7745	0 30
40	21744	057647	45	689981	19	67666	65	6343	0 40
50	26388	041602	42	672471	07	69131	65	4941	0 50
49 0	31026	025560	39	654964	05	70596	66	3538	0 11
10	35667	009511	36	637459	01	71062	65	2135	0 20
20	40307	993485	33	619958	19	73517	66	0712	0 30
30	44948	977452	31	602459	17	74993	67	9329	0 40
40	49588	961421	29	584962	6	76459	67	7926	0 50
50	54229	945392	26	567466	92	77926	66	6522	0 10
50 0	58869	929366	21	549974	90	79392	67	5118	0 20
10	63510	913343	21	532484	89	80859	68	3714	0 30
20	68150	897322	18	514995	85	82327	67	2310	0 40
30	72790	881304	14	497510	81	83794	67	0905	0 50
40	77430	865290	11	480028	79	85262	67	9591	0 10
50	82071	849279	08	462549	76	86730	68	8096	0 20
51 0	86711	833271	05	445073	74	88198	69	6691	0 30
10	91351	817266	03	427599	71	89667	68	5285	0 40
20	95990	801263	00	410128	69	91135	69	3879	0 50
30	9900630	785263	8	392659	67	92604	70	2473	0 10
40	05270	769265	5	375192	65	94073	70	1067	0 20
50	09910	753270	2	357727	62	95543	71	9661	0 30
52 0	14549	737278	89	340265	59	97013	71	8255	0 40
10	19189	721289	86	322806	57	98483	71	6848	0 50
20	23828	705303	83	305349	54	99954	72	5441	0 10
30	28468	689320	81	287895	51	4401425	70	4034	0 20
40	33107	673339	78	270444	49	02895	71	2626	0 30
50	37746	657361	76	252995	47	04366	72	1218	0 40
53 0	42386	641385	73	235548	45	05837	72	9810	0 50
10	47025	625412	70	218103	43	07309	71	8401	0 10
20	51664	609442	67	200662	41	08780	72	6994	0 20
30	56303	593475	64	183223	39	10252	73	5585	0 30
40	60942	577511	61	165786	37	11725	73	4177	0 40
50	65581	561550	58	148352	34	13198	73	2768	0 50
60	70219	545592	55	130921	31	14671	73	1358	0 10

Grad. 73.

S. M.

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Grad. 16.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54°	19070219	39	545592	15	130921	1728	4414671	73	1358	60
10	74858	39	529637	15	113493	1742	16144	73	9949	50
20	79497	38	513684	15	096066	3	17618	74	8539	40
30	84135	38	497734	0	078643	3	19091	73	7129	30
40	88774	39	481786	48	061221	22	20565	74	5719	20
50	93412	39	465841	45	043802	19	22039	75	4309	10
55°	98051	38	449899	42	026385	17	23514	75	2898	0
10	19102689	4638	433960	39	008972	13	24988	74	1487	50
20	0732	39	418024	36	991561	11	26463	75	0076	40
30	11965	39	402091	33	974153	08	27938	1476	8665	30
40	16604	38	386160	31	956746	07	29414	9366	7254	20
50	21242	38	370232	28	939342	04	30890	5842	5842	10
56°	25880	37	354306	26	921940	02	32366	4439	4439	0
10	30518	38	338383	23	904541	7	33842	3018	3018	50
20	35155	38	322463	20	887144	3	35319	1605	1605	40
30	39793	37	306546	17	869751	92	36795	0193	0193	30
40	44431	37	290631	15	852359	88	38272	8780	8780	20
50	49068	38	274710	11	834971	86	39749	7367	7367	10
57°	53706	37	258812	08	817585	83	41227	5953	5953	0
10	58344	37	242906	06	800202	81	42704	4540	4540	50
20	62981	38	227003	03	782821	78	44182	3126	3126	40
30	67618	37	211103	00	765443	76	45660	1712	1712	30
40	72256	37	195205	58	748066	74	47135	0298	0298	20
50	76893	36	179310	55	730692	72	48618	8884	8884	10
58°	81530	36	163417	53	713320	70	50097	7465	7465	0
10	86167	36	147527	50	695951	68	51576	6054	6054	50
20	90804	36	131640	48	678584	66	53056	4639	4639	40
30	95441	37	115756	46	661221	64	54535	3224	3224	30
40	29200078	37	099874	44	643859	62	56015	1808	1808	20
50	04715	36	083996	42	626501	60	57495	0392	0392	10
59°	09351	36	068121	40	609145	58	58976	8976	8976	0
10	13988	36	052249	38	591793	56	60456	7560	7560	50
20	18625	36	036379	36	574442	54	61937	6144	6144	40
30	23261	36	020512	34	557094	52	63418	4727	4727	30
40	27898	36	004647	32	539747	50	64900	3310	3310	20
50	32534	36	988785	30	522403	48	66382	1893	1893	10
60	37170	36	972926	28	505061	46	67865	0476	0476	0

Grad. 73.

S. M.

Grad. 17.

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M.S	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	19237170	37	972926	18	505061	1733	4467865	81	0476	60
10	41807	12	957070	183	487723	6	69347	83	9058	50
20	46443	4036	941217	0	470387	3	70830	84	7640	40
30	51079	35	925367	48	453054	32	72313	84	6121	30
40	55715	35	909519	45	435722	29	73797	83	4804	20
50	60351	35	893674	42	418393	25	75281	83	3385	10
1	64987	35	877832	39	401068	23	76764	84	1967	059
10	69623	35	861993	36	383745	20	78248	84	0548	50
20	74259	35	846157	34	366425	19	79731	84	9125	40
30	78894	35	830323	32	349106	17	81217	84	7709	30
40	83530	35	814491	29	331789	14	82702	84	6280	20
50	88166	35	798662	26	314475	11	84187	84	4876	10
2	92801	35	782836	23	297164	09	85672	86	3450	058
10	97437	35	767013	20	279855	05	87158	85	2030	50
20	102072	35	751193	17	262550	02	88643	85	0609	40
30	06707	35	735376	15	245248	01	90128	86	9188	30
40	11342	35	719561	12	227947	0	91614	86	7767	20
50	15978	35	703749	09	210649	1729	93100	87	6346	10
3	20613	34	687940	07	193353	3	94587	86	4925	057
10	25248	34	672133	04	176060	91	96073	87	3503	50
20	29884	34	656329	01	158769	88	97560	87	2081	40
30	34518	34	640528	9	141481	87	99047	88	0659	30
40	39152	35	624729	6	124194	85	4500535	89	9237	20
50	43787	35	608933	4	106909	83	02024	89	7815	10
4	48422	34	593139	91	089626	79	03513	88	6392	056
10	53056	35	577348	88	072347	77	05001	89	4969	50
20	57691	34	561560	85	055070	73	06490	88	3546	40
30	62325	35	545775	81	037797	70	07978	89	2122	30
40	66960	34	529994	78	020527	67	09467	89	0699	20
50	71594	35	514216	76	003260	66	10956	90	9275	10
5	76228	35	498440	74	885994	64	12446	90	7851	055
10	80863	34	482666	71	868730	62	13936	91	6424	50
20	85497	34	466895	68	851468	58	15427	90	5002	40
30	90131	35	451127	66	834210	57	16917	91	3577	30
40	94765	35	435361	64	816953	55	18408	91	2152	20
50	99399	35	419597	61	899698	52	19899	91	0727	10
60	1040433	35	403836	58	882446	50	21390	91	79301	054

Grad. 72.

S.M.

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Grad. 17.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6 0	19404033		4038336	18	882446	50	4511390	92	9301	60
10	08666	33	388078	17	865196	6	22881	91	7876	50
20	13300	34	372313	2	847950	17	24373	92	6450	40
30	17934	23	356571	50	830706	4	25865	1485	5024	30
40	22567	34	340821	47	813463	40	27358	93	3597	20
50	27201	33	325074	44	796223	37	28851	94	2171	10
7 0	31834	34	309330	41	778986	34	30344	95	0744	053
10	36468	4635	293589	38	761751	32	31837	96	9317	50
20	41101		277864	36	744520	29	33331	97	7890	40
30	45734		262115	33	727291	27	34824	98	6462	30
40	50367		246382	31	710064	25	36318	99	5035	20
50	55000		230651	28	692839	23	37812	95	3607	10
8 0	59633		214923	25	675616	19	39307	94	2179	052
10	64266		199198	22	658397	17	40801	95	0750	50
20	68899		183476	20	641180	15	42296	96	9322	40
30	73532		167756	18	623965	14	43791	97	7893	30
40	78165	32	152038	15	606751	11	45287	98	6464	20
50	82797	33	136323	12	589540	08	46783	99	5035	10
9 0	87430		120611	09	572332	05	48279	97	3605	051
10	92063	32	104902	06	555127	03	49775	96	2176	50
20	96695	33	089196	03	537924	01	51272	95	0746	40
30	101328	32	073493	01	520725	9	52768	94	9315	30
40	05960	31	057792	8	503527	8	54265	93	7885	20
50	10592		042094	7	486332	5	55762	92	6454	10
10 0	15224		026399	2	469139	93	57260	91	5024	050
10	19856		010707	89	451940	89	58757	90	3593	50
20	24488	121	995018	87	434763	87	60255	89	2161	40
30	29120		979331	85	417578	85	61753	88	0730	30
40	33752		963646	83	400394	84	63252	87	9298	20
50	38384		947963	80	383212	82	64751	86	7866	10
11 0	43016		932283	77	366033	79	66250	85	6434	049
10	47648	31	916606	74	348857	76	67749	84	5002	50
20	52279	32	900932	72	331683	74	69245	83	3569	40
30	56911	31	885160	69	314511	72	70749	82	2136	30
40	61542	32	869591	66	297342	69	72246	81	0703	20
50	66174	31	853925	63	280176	66	73745	80	9270	10
60	-70805		838262		263011	64	75250	79	7836	048

Grad. 72.

J. M.

Grad. 17.

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St. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
12 0	29570803	31	838162	60	2263011	60	4375250	00	7836	60
10	75436	32	822601	7	245852	58	76750	01	6402	50
20	80068	33	806945	1565	228694	56	78251	02	4968	40
30	84699	34	791290	3	211538	54	79752	03	3534	30
40	89330	35	775637	50	194383	52	81254	04	2100	20
50	93961	36	759987	47	177237	50	82756	05	0665	10
13 0	98592	37	744340	44	160081	48	84259	06	9230	047
10	19603223	38	728696	41	142935	46	85761	07	7795	50
20	072813	39	713055	39	125791	44	87264	08	6360	40
30	12484	40	697416	36	108649	42	88767	09	4924	30
40	17115	41	681780	34	091509	40	90271	10	3489	20
50	21745	42	666146	31	074372	38	91774	11	2053	10
14 0	26376	43	650515	28	057237	36	93278	12	0616	046
10	31006	44	634887	25	040105	34	94782	13	9180	50
20	35637	45	619262	23	022975	32	96287	14	7743	40
30	40267	46	603639	21	005848	30	97791	15	6306	30
40	44897	47	588018	18	988722	28	99296	16	4869	20
50	49527	48	572400	15	971599	26	100000	17	3432	10
15 0	54157	49	556785	13	954475	24	02306	18	1994	045
10	58787	50	541173	11	937361	22	03812	19	0557	50
20	63417	51	525564	9	920247	20	05317	20	9119	40
30	68047	52	509957	7	903134	18	06823	21	7680	30
40	72677	53	494352	5	886023	16	08329	22	6242	20
50	77307	54	478749	3	868913	14	09836	23	4803	10
16 0	81937	55	463149	1	851806	12	11343	24	3364	044
10	86566	56	447552	7	834702	10	12850	25	1925	50
20	91196	57	431958	5	817600	8	14358	26	0486	40
30	95825	58	416367	3	800502	6	15865	27	9046	30
40	19700445	59	400779	1	783406	4	17373	28	7606	20
50	05084	60	385194	0	766313	2	18881	29	6166	10
17 0	09713	61	369612	82	749223	0	20389	30	4726	043
10	14342	62	354032	80	732134	89	21898	31	3286	50
20	18971	63	338455	77	715049	87	23406	32	1845	40
30	23601	64	322881	74	697966	85	24915	33	0404	30
40	28230	65	307309	72	680885	83	26424	34	8963	20
50	32859	66	291739	70	663803	81	27934	35	7522	10
60	37487	67	276172	67	646728	79	29444	36	6086	042

Grad. 11.

S.M.

Grad. 17.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	29737487	4629	111 276172	64	646728	74	4629444	10	6080	60.
10	421116		111 260608	61	629654	71	30954	11	4638	90
20	46745		245047	61	612582	71	32465	11	3196	40
30	51374		229488	55	595513	63	33975	10	1754	30
40	56002	28	213932	55	578446	59	35486	11	0311	20
50	60631	29	198378	4	561381	5	36997	11	8869	42
19 0	65259	28	182827	51	544318	63	38509	12	7426	43
10	69887		167279	48	527259	59	40020	11	5982	44
20	74516	29	151734	45	510202	57	41532	12	4539	43
30	79144	28	136191	43	493147	55	43044	11	3095	44
40	83772		120650	41	476093	54	44557	11	1652	43
50	88400		105112	38	459042	51	46070	11	0208	44
20 0	93028		089577	35	441994	48	47583	11	8763	45
10	97656		074045	32	424949	45	49096	14	7319	44
20	29802284		058516	29	407906	43	50610	14	5874	50
30	06912		042989	27	390866	40	52123	13	4429	40
40	11539	27	027464	25	373827	39	53637	14	2984	30
50	16167	28	011942	22	356791	36	55151	14	1538	20
21 0	20795		996423	19	339757	34	56666	15	0093	46
10	25422	17	980907	16	322727	30	58180	14	8647	45
20	30050	28	965393	14	305698	29	59695	15	7201	50
30	34677	27	949882	11	288672	26	61210	15	5754	40
40	39304		934373	09	271647	24	62726	16	4308	30
50	43932	28	918867	06	254625	22	64242	16	2861	20
22 0	48559	27	903364	03	237605	20	65759	17	1414	47
10	53186		887864	00	220589	16	67275	16	9967	40
20	57813		872367	15	203575	14	68792	17	8520	30
30	62440		856872	7	186563	12	70309	17	7072	48
40	67067	26	841379	3	169553	10	71826	18	5624	30
50	71693	27	825888	91	152544	09	73344	18	4176	20
23 0	76320		810400	88	135539	05	74861	17	2728	49
10	80947		794915	85	118536	03	76379	18	1279	50
20	85574	16	779433	82	101536	00	77897	19	9830	40
30	90200	27	763954	79	084538	8	79416	19	8381	30
40	94827	16	748477	77	067543	1699	80934	18	6932	20
50	99453		733002	75	050549	4	82453	19	5483	10
60	29904079		717530	72	033558	91	83972	19	4033	036

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S.M

Grad. 18.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
24 0	19904079	16	120717530	120	033558	1699	4681972	120	95424033	60
10	08705	27	0702061	146	016569	895	85492	19	2583	50
20	13332	46	686595	174	999584	4	87011	10	1133	40
30	17958	61	671131	199	982600	81	88531	10	9682	30
40	22584	79	655670	226	965619	80	90051	121	8232	20
50	27210	96	640211	253	948639	77	91572	141	6781	10
25 0	31836	114	624755	280	931661	74	93093	161	5330	035
10	36462	131	609302	308	914688	72	94614	181	3879	50
20	41087	148	593852	336	897716	69	96136	201	2427	40
30	45723	166	578404	364	880747	68	9765	221	0976	30
40	50339	183	562958	392	863779	65	99179	241	9524	20
50	54964	201	547515	420	846814	63	4700701	261	8072	10
26 0	59590	218	532074	448	829851	61	02223	281	6619	034
10	64215	236	516636	476	812890	59	03746	301	5167	50
20	68840	253	501201	504	795933	57	05268	321	3714	40
30	73461	271	485769	532	778978	55	06791	341	2261	30
40	78091	288	470339	560	762025	53	08314	361	0807	20
50	82716	306	454912	588	74507	51	09838	381	9354	10
27 0	87341	323	439487	616	728125	49	11362	401	7900	033
10	91966	341	424065	644	711279	46	12886	421	6446	50
20	96591	358	408645	672	694234	45	14411	441	4992	40
30	10001216	376	393225	700	677293	41	15935	461	3538	30
40	05841	393	377814	728	660354	39	17460	481	2083	20
50	10465	411	362402	756	643417	37	18985	501	0628	10
28 0	15090	428	346993	784	626483	34	20510	521	9173	032
10	19714	446	331587	812	609551	32	22036	541	7718	50
20	24339	463	316183	840	592622	29	23561	561	6262	40
30	28963	481	300782	868	575695	27	25087	581	4807	30
40	33588	498	285383	896	558769	26	26614	601	3351	20
50	38212	516	269987	924	541846	23	28141	621	1895	10
29 0	42836	533	254594	952	524926	20	29668	641	0438	031
10	47460	551	239204	980	508009	17	31195	661	8982	50
20	52084	568	223817	1008	491094	15	32723	681	7525	40
30	56708	586	208432	1036	474182	12	34250	701	6068	30
40	61332	603	193049	1064	457271	11	35778	721	4610	20
50	65956	621	177668	1092	440362	09	37306	741	3153	10
60	70580	638	162290	1120	423455	07	38835	761	1695	020

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S.M.

Grad. 17.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
30	50070580	24	162290	5	423455	1690	4738835	28	951695	58	60
10	75204	23	146915	11	406552	1691	40363	29	0237	58	50
20	79827	24	131543	17	389651	1692	41891	30	8779	59	40
30	84451	23	116173	68	372752	1693	43421	31	7320	59	30
40	89074	24	100805	65	355854	1694	44951	32	5862	58	20
50	93698	23	085440	62	338959	1695	46481	33	4403	59	10
31	98321	24	070078	59	322066	1696	48012	34	2944	59	020
10	30102944	24	054715	26	305176	1697	49543	35	1485	50	50
20	07568	24	039365	54	288290	1698	51073	36	0025	60	40
30	12191	24	024005	52	271405	1699	52604	37	8565	50	30
40	16814	24	008657	50	254522	1700	54135	38	7105	50	20
50	21437	24	993307	47	237640	1701	55667	39	5645	50	10
32	26060	22	977960	44	220762	1702	57198	40	4185	61	028
10	30683	22	962616	41	203887	1703	58729	41	2724	50	50
20	35306	22	947275	38	187014	1704	60261	42	1263	40	40
30	39928	23	931937	36	170144	1705	61793	43	9802	50	30
40	44551	23	916601	34	153275	1706	63326	44	8341	50	20
50	49173	23	901267	31	136408	1707	64859	45	6879	62	10
33	53796	22	885936	28	119543	1708	66393	46	5417	50	027
10	58418	23	870608	26	102681	1709	67927	47	3955	50	50
20	63041	22	855282	23	085822	1710	69460	48	2493	40	40
30	67663	23	839959	21	068965	1711	70994	49	1031	63	30
40	72285	23	824638	18	052110	1712	72528	50	9568	50	20
50	76907	23	809320	15	035257	1713	74063	51	8105	50	10
34	81530	22	794005	13	018408	1714	75597	52	6642	64	026
10	86152	22	778692	10	001560	1715	77132	53	5178	50	50
20	90774	22	763382	08	984715	1716	78667	54	3715	63	40
30	95395	22	748074	05	967871	1717	80203	55	2251	64	30
40	30200017	22	732769	03	951031	1718	81738	56	0787	50	20
50	04639	22	717466	00	934192	1719	83274	57	9323	50	10
35	09261	21	702166	15	917356	1720	84810	58	7858	65	025
10	13881	22	686869	12	900522	1721	86347	59	6394	64	50
20	18504	22	671574	10	883691	1722	87883	60	4929	65	40
30	23125	22	656282	09	866862	1723	89420	61	3464	50	30
40	27747	22	640992	07	850035	1724	90957	62	1998	66	20
50	32368	22	625705	04	833211	1725	92494	63	0533	65	10
60	36989	22	610429	02	816389	1726	94032	64	19067	66	024

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S.M.

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M. S.	Sinus.	D. Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
36 0	30236989	610421	10	1816389	1681	4794031	37	9067	60
10	41610	595139	82	799570	1681	95569	37	7601	66
20	46131	579860	1517	782753	1681	97107	38	6134	67
30	50852	564584	1517	765939	4	98645	39	4668	66
40	55473	549310	4	749126	13	1000184	39	3201	30
50	60094	534038	72	732315	11	01723	40	1734	20
37 0	64715	518769	69	715506	09	03263	40	0267	10
10	69336	503502	67	698700	06	04802	39	8800	023
20	73956	488238	64	681896	04	06342	39	7332	68
30	78577	474977	61	665095	01	07882	40	5864	40
40	83198	457718	59	648296	9	09422	41	4390	30
50	87818	442462	56	631499	7	10963	41	2928	20
38 0	92438	427208	54	614704	5	12504	42	1459	10
10	97059	411957	51	597912	92	14045	42	9991	022
20	30301679	396709	48	581122	90	15587	42	8522	68
30	06299	381463	46	564335	87	17123	41	7053	69
40	10919	366219	44	547549	86	18670	42	5583	30
50	15539	350978	41	530766	83	20212	42	4114	20
39 0	20159	335740	38	513986	80	21754	43	2644	10
10	24779	320504	36	497107	79	23297	43	1174	021
20	29399	305271	33	480431	76	24840	43	9703	50
30	34019	290041	30	463658	73	26383	44	8233	40
40	38638	274813	28	446886	72	27927	44	6762	30
50	43258	259587	26	430117	69	29470	44	5291	20
40 0	47877	244364	23	413350	67	31014	44	3820	10
10	52497	229143	21	396585	65	32558	45	2349	020
20	57116	213925	18	379822	63	34103	45	0877	50
30	61736	198709	16	363061	61	35648	45	9405	40
40	66355	183496	13	346303	58	37193	46	7933	30
50	70974	168285	11	329546	57	38739	46	6461	20
41 0	75593	153077	08	312793	53	40284	45	4988	10
10	80212	137871	06	296041	52	41830	46	3515	019
20	84831	122668	03	279292	79	43376	46	2042	50
30	89450	107468	00	262545	47	44923	47	0569	40
40	94069	092270	18	245800	45	46470	47	9096	30
50	98687	077074	15	229057	43	48017	47	7622	20
60	30403306	061881	3	212317	40	49564	48	6148	10

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S. M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
+2 0	30403306	19	061881	90	212317	8	4849564	48	5148	60
10	07925	18	046691	114	195579	1673	51112	47	4674	74
20	12543	19	031504	157	178845	4	52659	48	3200	40
30	17162	18	016319	153	162112	3	54207	175	1725	30
40	21780	18	001136	3	145381	31	55755	0350	0350	10
50	26398	19	985956	80	128652	29	57304	9215	5775	10
43 0	31017	18	970779	77	111926	26	58853	1549	7300	017
10	35635	18	955604	75	095202	24	60402	50	5825	50
20	40253	18	940432	72	078480	22	61952	49	4249	76
30	44871	17	925263	69	061762	18	63501	50	2873	30
40	49489	17	910096	67	045045	17	65051	50	1397	20
50	54107	17	894932	64	028331	14	66601	9524	9921	10
44 0	58725	17	879770	62	011615	12	68151	51	8444	77
10	63342	18	864611	59	994905	10	69702	51	6967	016
20	67960	18	849455	56	978203	06	71252	50	5490	50
30	72578	17	834301	54	961495	05	72803	51	4013	40
40	77195	18	819145	52	944795	03	74354	51	2530	30
50	81813	17	803995	50	92809	01	75906	52	1055	20
45 0	86430	17	788852	47	911394	1646	77457	9523	9580	10
10	91047	18	773708	44	894655	4	79010	53	8102	015
20	95664	18	758567	41	878004	91	80563	53	6623	74
30	30500282	17	743428	39	861313	90	82115	54	5243	78
40	04899	17	728291	37	844623	88	83668	54	3666	75
50	09516	17	713156	35	827934	85	85221	54	2187	70
46 0	14133	16	698024	32	811250	83	86774	54	0708	80
10	18750	16	682895	29	794567	81	88328	53	9225	80
20	23366	17	667768	27	777887	80	89881	53	7749	75
30	27983	17	652644	24	761205	78	91435	54	6269	80
40	32600	16	637522	22	744523	76	92989	55	4789	30
50	37216	17	622403	19	727855	74	94544	55	3308	20
47 0	41833	16	607287	16	711188	71	96099	56	1828	80
10	46445	17	592174	13	694520	68	97654	56	0347	81
20	51066	16	577063	11	677852	67	99110	55	8866	50
30	55682	16	561954	09	661159	64	4900765	55	7384	40
40	60298	17	546847	07	644526	63	02321	56	5903	30
50	64914	17	531742	05	627865	61	03877	57	4421	81
60	69531	1	516640	02	611206	59	05434	57	2939	10

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S.M.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48 0	30569531	16	516640	11	611206	165	4905434	56	2939	60
10	74147	15	501541	10	594551	164	06990	57	1457	50
20	78762	15	486444	9	577897	163	08547	57	9975	40
30	83378	15	471350	8	561246	162	10104	58	8492	30
40	87994	15	456259	7	544597	161	11662	59	7009	20
50	92610	15	441170	6	527950	160	13220	60	5526	10
49 0	97226	15	426084	5	511306	159	14778	61	4043	0 11
10	30601843	16	411001	4	494665	158	16336	62	2559	50
20	06457	15	395920	3	478025	157	17895	63	1076	40
30	11072	15	380841	2	461388	156	19453	64	9592	30
40	15687	16	365765	1	444753	155	21012	65	8108	20
50	20303	15	350691	0	428120	154	22571	66	6623	10
50 0	24918	15	335619	0	411488	153	24131	67	5139	0 10
10	29533	14	320549	0	394859	152	25690	68	3654	50
20	34148	14	305482	0	378232	151	27250	69	2169	40
30	38763	14	290418	0	361608	150	28810	70	0683	30
40	43378	14	275357	0	344986	149	30371	71	9198	20
50	47993	14	260299	0	328367	148	31932	72	7712	10
51 0	52608	14	245243	0	311749	147	33494	73	6226	0 9
10	57223	14	230190	0	295135	146	35055	74	4740	50
20	61837	14	215139	0	278522	145	36617	75	3253	40
30	66452	14	200090	0	261911	144	38179	76	1767	30
40	71066	14	185044	0	245303	143	39741	77	0280	20
50	75681	14	170000	0	228696	142	41304	78	8793	10
52 0	80295	14	154958	0	212092	141	42866	79	7306	0 8
10	84909	14	139919	0	195490	140	44429	80	5818	50
20	89524	14	124883	0	178891	139	45992	81	4330	40
30	94138	14	109850	0	162294	138	47556	82	2842	30
40	98752	14	094819	0	145700	137	49119	83	1354	20
50	30703366	14	079790	0	129107	136	50683	84	9866	10
53 0	07980	13	064764	0	112516	135	52248	85	8377	0 7
10	12594	13	049740	0	095928	134	53812	86	6888	50
20	17207	13	034718	0	079341	133	55377	87	5399	40
30	21821	13	019699	0	062757	132	56942	88	3910	30
40	26435	13	004683	0	046175	131	58508	89	2420	20
50	31048	13	989670	0	029697	130	60073	90	0930	10
60	35662	13	974659	0	013020	129	61639	91	59440	0 6

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54	30735662	13	974659	1506	013020	1067	4961639	66	91440	60
10	40175	11	959641	1506	996446	1067	63205	67	7950	50
20	44889	14	944645	1506	979873	1067	64772	66	6460	40
30	49502	11	919641	1506	963303	69	66338	1567	4969	30
40	54115	11	914639	1506	946734	67	67905	1567	3478	20
50	58728	11	899639	1499	930167	64	69472	1567	1987	10
55	63341	11	884642	1499	913603	63	71039	68	0496	0
10	67954	11	869648	1499	897041	58	72607	67	9004	50
20	72567	11	854657	89	880483	57	74174	68	7512	40
30	77180	12	839668	87	863926	55	75742	69	6020	30
40	81793	12	824681	84	847371	53	77310	70	4528	20
50	86405	13	809697	81	830818	50	78879	71	3036	10
56	91018	11	794716	79	814268	48	80448	70	1543	0
10	95631	11	779737	76	797720	46	82017	69	0050	50
20	100243	11	764761	74	781174	43	83587	69	8557	40
30	04856	12	749787	72	764621	41	85156	70	7064	30
40	09468	12	734815	70	748089	40	86726	71	5570	20
50	14080	12	719845	67	731549	38	88296	71	4076	10
57	18692	11	704878	64	715011	35	89867	72	2582	0
10	23304	11	689914	62	698476	33	91438	70	1088	50
20	27916	11	674952	59	681944	30	93008	71	9594	40
30	32528	11	659993	57	665414	29	94579	72	8099	30
40	37140	11	645036	54	648885	26	96151	73	6604	20
50	41752	11	630082	51	632359	23	97723	73	5109	10
58	46364	11	615131	49	615836	22	99295	73	3613	0
10	50976	11	600182	46	599314	18	1000868	72	2118	50
20	55588	12	585236	44	582796	17	02440	73	0622	40
30	60199	11	570292	42	566279	15	04013	73	9126	30
40	64810	11	555350	40	549764	13	05586	74	7630	20
50	69422	11	540410	38	533251	11	07159	75	6133	10
59	74033	11	525472	35	516740	09	08732	74	4637	0
10	78644	11	510537	32	500231	06	10306	75	3140	50
20	83255	11	495605	30	483725	05	11880	75	1642	40
30	87867	11	480675	28	467220	02	13455	74	0144	30
40	92478	11	465747	25	450718	00	15029	75	8647	20
50	97080	10	450822	23	434218	97	16604	75	7150	10
60	10901699	10	435900	21	417721	94	18179	75	5652	0

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S.M.

Grad. 18.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
0	30901699	117	435900	20	417721	1649	5018179	76	55651	99	60
10	06310	117	420980	18	401225	1649	19755	75	4153	98	50
20	10921	117	406062	15	384732	1649	21330	76	2655	1499	40
30	15532	10	391147	12	368241	88	22906	77	1156	30	30
40	20142	11	376235	09	351753	86	24482	77	9657	20	20
50	24753	11	361326	07	335267	83	26059	76	8158	10	10
1	29363	10	346419	04	318784	81	27635	77	6659	1500	059
10	33974	11	331515	02	302303	79	29212	77	5159	50	50
20	38584	10	316613	00	285824	78	30789	78	3659	40	40
30	43194		301713	8	269346	75	32367	77	2159	30	30
40	47804		286815	1486	252871	74	33944	78	0659	20	20
50	52414		271919	3	236397	71	35522	78	9158	10	10
2	57024		257026	90	219926	69	37100	79	7658	00	058
10	61634		242136	87	203457	65	38679	78	6157	50	50
20	66244		227249	85	186992	64	40257	79	4656	40	40
30	70854		212364	83	170528	62	41836		3154	30	30
40	75464	09	197481	81	154066	61	43415	1580	1653	20	20
50	80073	10	182600	79	137605	59	44995		0151	10	10
3	84683		167721	76	121146	56	46575		8649	03	057
10	89293	09	152845	74	104690	55	48155	81	7146	50	50
20	93902	09	137971	71	088235	51	49736	80	5644	40	40
30	98511	10	123100	68	071784	49	51316	81	4141	30	30
40	103121	09	108232	65	055335	46	52897	81	2638	20	20
50	07730		093367	63	038889	45	54478	82	1135	10	10
4	12335		078504	61	022444	42	56060	81	9632	04	056
10	16948		063643	59	006002	41	57641	82	8128	50	50
20	21557		048784	56	989561	38	59223		6624	40	40
30	26166		033928	54	973123	37	60805	83	5120	30	30
40	30775		019074	51	956686	34	62388		3616	20	20
50	35387	09	004223	49	940252	32	64971		2111	05	10
5	39992	11	989374	47	923820	30	66554		0606		055
10	44601	08	974527	44	907390	28	67137	84	9101	50	50
20	49209	09	959683	41	990962	24	68721	83	7596	40	40
30	53818	08	944842	39	874538	23	70304	94	6091	30	30
40	58426	09	930003	36	858115	20	71888		4585	06	20
50	63035	08	915167	34	841695	19	73472	85	3079	10	10
60	67643		900333		825276		75057		1573		054

Grad. 71.

S.M.

Grad. 18.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6 0	31067643	418	900333	31	-825276	16	5075057	84	95069504	60
10	72251		885502	16	-808861	3	76641	85	0069	50
20	76859		870674	148	792448	1	78226		8560	40
30	81467		855848	4	776037	10	79811	86	7054	30
40	86075		841024	21	759627	07	81397		5547	20
50	90683		826203	19	743220	06	82983	87	4039	10
7 0	95291		811384	17	726814	03	84570	86	2532	05
10	99899	17	796567	13	710411	02	86156	1387	1024	50
20	31104506	18	781752	13	894005	00	87743	9503	9511	40
30	09114		766939	11	877605	8	89330	88	8008	30
40	13722	17	752128	09	861211	1639	90917	87	6500	20
50	18329		737319	07	844814	4	92505	88	4991	10
8 0	22936	18	722512	04	828420	92	94092	87	3483	08
10	27544	17	707708	01	812028	89	95680	88	1974	05
20	32151		692907	8	795639	87	97268	89	0464	50
30	36758		678109	4	779252	82	98857	89	8955	40
40	41365		663315	2	762870	81	100445	90	7445	30
50	45972		648523	89	746485	78	02034	89	5935	20
9 0	50579		633734	87	730113	77	03623	90	4425	10
10	55186		618947	85	713734	74	05213	89	2915	05
20	59793		604162	83	697360	73	06802	90	1404	50
30	64400	16	589379	80	680987	70	08392	91	9894	40
40	69006	17	574599	78	664617	68	09982	90	8383	30
50	73613	16	559821	76	648249	67	11572	91	6875	20
10 0	78219	17	545045	74	631882	65	13163	91	5360	10
10	82826	16	530271	72	615517	64	14754	92	3845	05
20	87432	17	515499	69	599153	60	16346	91	2330	50
30	92039	16	500730	67	582793	59	17937	92	0824	40
40	96645		485963	64	566434	56	19529	93	9512	30
50	32201351		471199	61	550078	53	21121	90	7995	20
11 0	05857		456438	59	533725	52	22713	93	6287	10
10	10463		441679	57	517373	49	24306	91	4774	05
20	15069		426922	54	501024	47	25898	93	3260	50
30	19675		412168	52	484677	45	27491	94	1747	40
40	24281	15	397416	49	468332	43	29084	94	0233	30
50	28886	16	382667	47	451989	41	30678	94	8749	20
60	33492		367920		435648		32272	94	7205	10

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S.M.

Grad. 18.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
12 0	31233492	05	116 367929	1474	5 235648	1633	512272	94	9499 7205	14 60
10	38097	06	116 353175	3	219309	8	33866	95	5691	50
20	42703	05	338432	0	202971	4	35461	95	4176	40
30	47308	05	323692	37	186637	32	37055	94	2661	30
40	51914	06	308955	34	170305	29	388650	95	1146	20
50	56519	4605	294221	32	153976	28	40255	96	9631	10
13 0	61124		279489	30	137648	25	41841	96	8116	16 047
10	65719		264759	28	121323	24	43436	95	6600	50
20	70334		250031	25	104999	21	45032	96	5084	40
30	74939		235306	23	088678	17	46628	1597	3568	30
40	79544		220583	20	072358	10	48225	95	2052	20
50	84149		205863	18	056041	15	49822	96	0535	10
14 0	88754	04	191145	16	039726	13	51419	9497	9018	046
10	93358	05	176429	14	023413	12	53016	98	7501	50
20	97963		161715	10	007101	07	54614	97	5984	40
30	31302568	04	147005	08	990794	06	56211	98	4466	30
40	07172		132297	05	974488	03	57809	99	2949	20
50	11776	05	117592	03	958185	02	59407	99	1431	10
15 0	16381	04	102889	01	941853	9	61006	98	9913	19 045
10	20985		088188	9	925584	8	62604	99	8394	50
20	25589		073489	1469	909286	5	64203	1600	6876	40
30	30193		058793	4	892991	94	65802		5357	30
40	34797		044099	91	876697	91	67402		3838	20
50	39401		029408	89	860406	89	69002		2519	10
16 0	44005		014719	87	844117	88	70602	01	0799	044
10	48609	03	000032	85	827829	85	72203	00	9279	50
20	53212	115	985347	83	811544	84	73803	01	7759	40
30	57816		970664	80	795260	81	75404	01	6239	30
40	62420	03	955984	77	778979	78	77005	02	4719	20
50	67023	04	941307	75	762701	77	78606	01	3198	10
17 0	71627	03	926632	73	746424	75	80208	03	1677	043
10	76230		911959	71	730149	74	81810	02	0156	50
20	80833		897288	68	713875	70	83413	03	8635	40
30	85436	04	882620	66	697605	69	85015	02	7114	30
40	90040	03	867954	63	681336	66	86618	03	5592	20
50	94643		853291	60	665070	63	88221		4070	10
60	99246		838631		648807		89814		2548	042

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	31399246	03	838631	115	648807	61	5189824	04	2548	66
10	31403849	02	823973	116	632545	9	91428	03	1025	23
20	08451	03	809317	3	616286	1615	93031	04	9503	22
30	13054		794664	51	600029	7	94635	04	7980	30
40	17657		780013	49	583774	5	96239	03	6457	20
50	22259	02	765364	46	567520	54	97844	04	4934	10
19 0	26862	03	750718	44	551269	51	99449	1605	3410	24
10	31464	03	736074	42	535020	49	5201054	06	1886	50
20	36067	01	721432	39	518772	48	02660	05	0362	40
30	40669		706793	36	502528	44	04265	06	8838	30
40	45271	03	692157	34	486286	42	05871	06	7314	20
50	49874	03	677523	31	470046	40	07477	05	5789	10
20 0	54476	04	662892	29	453809	37	09083	05	4264	40
10	59078		648263	27	437573	36	10690	07	2739	50
20	63680	01	633636	25	421339	34	12297	08	1214	40
30	68281	02	619011	23	405107	32	13904	08	9688	26
40	72883		604388	21	388876	31	15512	09	8163	30
50	77485		589767	18	372648	28	17119	07	6637	20
21 0	82087	01	575149	15	356422	26	18727	08	5111	10
10	86688	02	560534	13	340199	23	20335	09	3584	27
20	91290	01	545921	11	323977	22	21944	09	2058	50
30	95891	02	531310	08	307758	19	23552	08	0531	40
40	31500493	01	516702	06	291541	17	25161	09	9004	30
50	05094	01	502096	04	275326	15	26770	10	7476	20
22 0	09695		487492	02	259112	14	28380	10	5949	10
10	14396		472890	02	243901	11	29989	09	4421	27
20	18897		458291	01	226692	09	31599	10	2893	50
30	23498		443694	01	210485	07	33209	11	1365	40
40	28099		429100	01	194280	05	34820	11	9837	30
50	32700		414509	01	178078	01	36431	11	8308	20
23 0	37301	00	399920	01	161878	00	38042	12	6779	10
10	41901	01	385333	01	145679	9	39654	12	5250	37
20	46502		370749	01	129483	6	41266	13	3721	50
30	51103	00	356167	01	113289	4	42878	13	2191	40
40	55703		341587	01	097097	2	44490	13	0661	30
50	60303	01	327009	01	080907	0	46102	13	9131	20
60	64904		312433	01	064718	9	47715	13	7601	10

Grad. 21.

S.M.

Grad. 18.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
24 0	11564904	4600	112433	73	11064718	1018	5247715	12	94801	60
10	69504		1297860	73	0048533	1018	49327	12	6071	50
20	74104		283289	71	032349	1018	50940	13	4540	40
30	78704		268721	1456	016168	80	52553	14	3009	30
40	83304		254155	109	999988	77	54167	14	1478	20
50	87904		239592	3	983811	76	55781	15	9947	10
25 0	92504	4599	225031	61	967635	73	57396	15	8415	32
10	97104		210472	59	951462	72	59010	14	4884	31
20	101704		195915	57	935290	69	60615	1615	5352	32
30	06303	00	181361	54	919121	66	62240	1615	3819	33
40	10903		166810	51	902955	65	63855	16	2287	32
50	15503		152261	49	886790	62	65471	16	0754	33
26 0	20102	99	137715	44	870628	60	67087	17	9221	34
10	24701		123171	42	854468	59	68703	17	7688	50
20	29300	00	108629	40	838309	56	70320	17	6155	40
30	33900	99	094089	38	822153	55	72936	16	4621	34
40	38499		079551	36	805998	53	73513	17	3088	33
50	43098		065015	33	789845	50	75170	17	1554	34
27 0	47697	98	050482	31	773695	49	76787	18	0019	35
10	52296		035951	29	757541	41	78405	17	8485	34
20	56894	99	021422	27	741400	45	80022	18	6950	35
30	61493		006895	25	725255	43	81640	18	5415	30
40	66092	114	992370	23	709112	42	83258	15	3880	20
50	70691		977847	20	692970	39	84877	15	2345	10
28 0	75289	98	963327	18	676831	37	86496	20	0810	36
10	79888	98	948809	15	660694	35	88115	20	9274	50
20	84486		934294	13	644559	31	89735	19	7738	40
30	89084		919782	10	628428	30	91354	20	5202	37
40	93682	99	905272	07	612298	27	92974	20	4665	20
50	98281	98	890765	05	596171	26	94594	21	3128	10
29 0	102879		876260	03	580045	24	96215	21	1591	031
10	07477		861757	01	563921	21	97836	20	0054	50
20	12075	97	847256	01	547800	19	99456	21	8517	40
30	16672	98	832758	1449	531681	18	100077	22	6980	30
40	21270		818262	3	515563	15	01699	22	5442	20
50	25868		803769	30	499448	12	04321		3904	10
60	30466		789279		483336		05943		2366	030

Grad. 71.

S.M

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Grad. 18.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
30	31730466	97	789279	8	100	10	5305943	12	1366	60
10	35063	97	774791	148	100	10	07565	12	0827	50
20	39661	97	760305	6	100	9	09188	12	9288	40
30	44258	97	745822	3	100	9	10810	12	7749	30
40	48855	98	731341	81	100	4	12433	12	6210	20
50	53453	98	716864	77	100	00	14056	24	4671	10
31	58050	4597	702385	75	1609	9	15680	23	3131	40
10	62647	97	687916	73	1609	6	17303	23	1592	39
20	67244	97	673445	71	1609	5	18927	24	0052	40
30	71841	97	658976	69	1609	93	20551	25	8511	41
40	76438	97	644509	67	1609	92	22176	25	6971	40
50	81035	96	630045	64	1609	89	23801	26	5430	41
32	85632	96	615583	62	1609	88	25427	25	3889	42
10	90218	97	601123	60	1609	85	27052	25	2348	50
20	94825	96	586665	58	1609	84	28678	26	0807	40
30	99421	97	572210	55	1609	81	30304	26	9265	41
40	104018	96	557757	53	1609	75	31930	27	7724	41
50	08614	96	543306	51	1609	78	33557	26	6182	42
33	13210	97	528857	49	1609	25	35183	27	4635	43
10	17807	96	514410	47	1609	70	36810	28	3097	42
20	22403	96	499965	45	1609	73	38438	27	1554	43
30	26999	95	485523	42	1609	65	40065	28	0011	30
40	31595	96	471084	39	1609	60	41693	28	8462	20
50	36191	95	456647	37	1609	65	43321	28	6925	10
34	40787	95	442213	34	1609	61	44945	28	5381	44
10	45382	96	427781	32	1609	58	46578	28	3837	50
20	49978	95	413351	30	1609	57	48206	29	2293	40
30	54574	95	398923	28	1609	57	49835	29	0749	30
40	59169	96	384497	26	1609	55	51464	30	9205	20
50	63765	95	370073	24	1609	54	53094	30	7660	10
35	68360	95	355652	21	1609	53	54724	31	6115	025
10	72955	96	341234	18	1609	48	56354	31	4570	50
20	77551	95	326818	16	1609	47	57985	30	3025	40
30	82146	95	312404	14	1609	44	59615	31	1475	46
40	86741	95	297992	12	1609	43	61246	31	9933	20
50	91336	95	283582	10	1609	41	62877	32	8387	50
60	95931	95	269175	07	1609	39	64509	32	6841	024

Grad. 71.

S.M.

Grad. 18.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
36 0	51895931	95	169175	108	904664	6	5364509	31	6841	60
10	51900526	94	254770	140	888630	1604	66140	32	5295	50
20	05121	94	140368	0	872596	2	67772	32	3748	40
30	09715	95	215968	8	856564	31	69404	1633	2201	30
40	14310	94	211570	1439	840533	29	71037	9476	0854	20
50	18905	94	197174	4	824504	27	72670	9475	9106	10
37 0	23499	95	182780	91	808477	25	74303	34	7559	47
10	28093	95	168389	86	792452	22	75937	33	6011	023
20	32688	4594	154000	84	776430	18	77570	34	4463	50
30	37282	95	139614	82	760410	16	79204	9475	2915	40
40	41876	94	125230	80	744392	15	80838	35	1366	30
50	46470	93	110848	77	728376	11	82472	35	9818	20
38 0	51064	93	096468	75	712361	10	84107	36	8269	10
10	55658	94	082091	73	696350	08	85741	37	6720	022
20	60252	94	067716	71	680340	07	87376	37	5170	50
30	64846	93	053343	69	664332	05	89011	36	3621	40
40	69440	94	038972	66	648325	03	90647	37	2071	30
50	74034	94	024603	64	632320	00	92283	37	0521	20
39 0	78627	93	010237	62	616317	99	93920	38	8970	10
10	83221	94	995873	60	600317	97	95556	37	7420	021
20	87814	94	981511	59	584318	95	97193	37	5869	50
30	92408	93	967152	57	568322	93	98830	38	4318	40
40	97001	92	952795	55	552328	91	5400467	38	2767	30
50	1001594	92	938440	53	536335	88	02105	39	1216	20
40 0	06187	92	924087	50	520344	86	03743	39	9664	10
10	10780	93	909737	47	504356	83	05381	40	8112	020
20	15373	92	895390	45	488370	81	07020	39	6560	50
30	19966	92	881045	42	472387	78	08658	38	5008	40
40	24559	92	866703	39	456406	76	10297	39	3456	30
50	29152	91	852364	37	440428	74	11936	40	1903	20
41 0	33744	91	838027	35	424452	72	13575	40	0350	10
10	38337	92	823692	33	408477	70	15215	41	8797	019
20	42930	92	809359	30	392505	68	16854	40	7243	50
30	47522	92	795019	28	376535	66	18494	41	5690	40
40	52115	92	780701	26	360567	64	20134	41	4136	30
50	56707	92	766375	23	344600	62	21775	41	2582	20
60	61299	92	752052	21	328636	60	23416	41	1028	10

Grad. 21.

S.M.

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Grad. 18.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 0	32061299		752052		328536		5423416		1028	60
10	65891	4592	737731	21	312674	62	25057	41	9473	50
20	70483		723412	9	296713	61	26699	41	7919	40
30	75075		709095	7	280755	158	28340	41	6364	30
40	79667		694780	5	264798	1597	29982	41	4808	20
50	84259		680457	13	248843	5	31624	43	3253	10
43 0	88851		666156	11	232889	54	33267	43	1698	017
10	93443		651848	08	216939	50	34909	42	0142	50
20	98034		637542	06	200990	49	36552	43	8586	40
30	32101626	91	623238	04	185043	47	38195	1644	7029	30
40	07217	91	608936	02	169097	46	39839	45	5473	20
50	21809	92	594636	00	153153	44	41483	44	3916	10
44 0	26400	91	580339	7	137212	41	43127	45	2359	016
10	20991		566044	5	121272	40	44772	45	0802	50
20	25583	92	551751	3	105335	37	46416	44	9245	40
30	30174	91	537461	90	089400	35	48061	45	7687	30
40	34765		523173	88	073467	33	49706	46	6129	20
50	39356		508888	85	057537	30	51351	45	4571	10
45 0	43947		494605	83	041608	29	52997	46	3013	015
10	48537	90	480324	81	025682	26	54642	45	1454	50
20	53128	91	466045	79	009757	25	56288	46	9896	40
30	57719		451768	77	993834	23	57934	9468	8337	30
40	62309	90	437494	74	977913	21	59581	47	6778	20
50	66900	91	423222	72	961994	19	61228	48	5218	10
46 0	71490		408952	70	946076	18	62876	47	3659	014
10	76081	91	394685	67	930162	14	64523	48	2099	50
20	80671	90	380420	65	914249	13	66171	48	0539	40
30	85261		366157	63	898338	11	67819		8978	30
40	89851		351896	61	882429	09	69467	0467	7418	20
50	94441		337637	59	866521	08	71116	49	5857	10
47 0	99031		323381	56	850617	04	72764	48	4296	013
10	32203621		309128	53	834715	02	74413	49	2735	50
20	08211		294877	51	818815	00	76062		1174	40
30	72801	89	280628	49	802917	1589	77711	50	9612	30
40	77390	90	266383	47	787020	7	79361	9466	8050	20
50	21980		252136	45	771325	5	81011	51	6488	10
60	26570		237894	42	755232	93	82662		4926	012

Grad. 17.

S.M.

Grad. 18.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48 0	3226570	89	1237894	40	107	755232	90	3482662	50	4926
10	31159	113	123654	107	739342	9	84312	50	3364	62
20	35748	90	109416	141	723453	9	85963	51	1801	40
30	40338	489	195180	4	707566	6	87614	1652	0238	30
40	44927	169	180946	31	697680	83	89266	9465	8675	20
50	49516	169	166715	29	675797	81	90918	1652	7111	10
49 0	54105	88	152486	27	659916	79	92570	53	5548	64
10	58694	89	138259	25	644037	78	94222	53	3984	50
20	63283	88	124034	22	628159	74	95875	52	2420	40
30	67872	88	109812	20	612285	73	97527	52	0856	30
40	72461	89	095592	18	596412	71	99180	51	9291	20
50	77049	88	081374	16	580541	70	5500833	54	7726	10
50 0	81638	88	067158	13	564671	66	02487	54	6161	058
10	86226	89	052945	11	548805	65	04140	54	4596	50
20	90815	88	038734	09	532940	63	05794	54	3031	40
30	95403	89	024525	06	517077	61	07448	55	1465	30
40	99992	88	010319	04	501216	59	09103	55	9899	20
50	32304580	112	996115	02	485357	57	10758	9465	8333	10
51 0	09168	149	981913	9	469500	55	12413	56	6767	057
10	13756	87	967714	7	453645	52	14069	56	5200	50
20	18344	88	953517	5	437793	51	15724	55	3634	40
30	22932	87	939322	93	421942	49	17380	56	2067	30
40	27520	88	925129	90	406093	47	19036	57	0500	20
50	32108	87	910939	88	390246	44	20693	57	8932	10
52 0	36695	88	896751	86	374402	43	22349	56	7365	67
10	41283	87	882565	84	358559	41	24006	57	5797	056
20	45871	88	868381	82	342718	40	25663	58	4129	50
30	50458	87	854199	79	326878	36	27321	57	2660	40
40	55045	88	840020	77	311042	35	28978	58	1092	30
50	59633	87	825843	75	295207	33	30636	58	9523	20
53 0	64220	88	811668	73	279374	32	32294	59	7954	10
10	68807	87	797499	70	263542	28	33953	59	6385	055
20	73394	88	783325	68	247714	27	35611	58	3816	50
30	77981	87	769157	66	231887	25	37270	59	2246	40
40	82568	88	754991	64	216062	24	38929	60	1676	30
50	87155	87	740827	62	200238	22	40589	60	0106	20
60	91742	88	726665	60	184416	21	42249	60	08536	10

Grad. 71.

S.M

Grad. 18.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54 0	32391742	87	716665	1415	184416	1581	5542249	60	9460	60
10	96329	86	712506	1415	168597	1581	43909	61	9460	71
20	32400915	87	698349	5	152779	1581	45570	62	9460	70
30	05502	86	684194	5	136964	1581	47230	63	9460	71
40	10088	87	670042	5	121151	1581	48891	64	9460	71
50	14675	86	655892	48	105340	1581	50552	65	9460	72
55 0	19261	87	641744	45	895531	1581	52213	66	9460	71
10	23847	86	627599	43	073724	1581	53875	67	9460	72
20	28433	87	613456	41	057920	1581	55536	68	9460	73
30	33020	86	599315	39	042117	1581	57198	69	9460	72
40	37606	85	585176	37	026316	1581	58860	70	9460	73
50	42191	86	571039	34	010516	1581	60523	71	9460	72
56 0	46777	87	556905	32	994719	1581	62186	72	9460	73
10	51363	86	542773	30	978924	1581	63849	73	9460	74
20	55949	85	528643	28	963130	1581	65513	74	9460	75
30	60535	86	514515	25	947339	1581	67176	75	9460	76
40	65120	87	500390	23	931550	1581	68840	76	9460	77
50	69706	86	486267	21	915763	1581	70504	77	9460	78
57 0	74291	87	472146	19	899977	1581	72169	78	9460	79
10	78876	86	458027	17	884194	1581	73833	79	9460	80
20	83461	85	443910	15	868412	1581	75498	80	9460	81
30	88047	86	429795	12	852632	1581	77163	81	9460	82
40	92632	87	415683	10	836854	1581	78829	82	9460	83
50	97217	86	401573	08	821078	1581	80495	83	9460	84
58 0	32501802	87	387465	06	805303	1581	82162	84	9460	85
10	06387	86	373359	03	789531	1581	83828	85	9460	86
20	10972	85	359256	01	773761	1581	85495	86	9460	87
30	15556	86	345155	01	757993	1581	87162	87	9460	88
40	20141	87	331056	01	742227	1581	88829	88	9460	89
50	24726	86	316959	01	726462	1581	90497	89	9460	90
59 0	29310	87	302864	01	710700	1581	92164	90	9460	91
10	33894	86	288771	01	694939	1581	93832	91	9460	92
20	38479	85	274681	01	679181	1581	95500	92	9460	93
30	43063	86	260593	01	663424	1581	97169	93	9460	94
40	47647	87	246507	01	647670	1581	98837	94	9460	95
50	52232	86	232424	01	631918	1581	5600506	95	9460	96
60	56815	87	218344	01	616169	1581	02175	96	9460	97

Grad. 71.

S.M.

Grad. 19.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	0	32556815	118	1407	8	5602175	70	94559454	1579	60
10	61399	112	104266	8	600421	174	03845	69	0179	50
20	65983	84	190190	4	584676	4	05514	70	8700	40
30	70507	83	176116	69	568932	4	07184	70	7121	30
40	75151	84	162043	73	553189	43	08854	71	5542	20
50	79735	83	147972	71	537447	42	10525	71	3963	10
1	0	83	133903	67	521907	40	12190	1671	2383	80
10	88902	84	119836	67	505969	38	13867	72	0803	059
20	93485	83	105772	64	490233	36	15539	72	9223	50
30	98068	84	091711	61	474501	34	17210	71	7643	40
40	1026152	83	077653	58	458771	32	18882	72	6062	30
50	07235	84	063597	56	443043	30	20554	72	4482	20
1	0	83	049544	53	427318	28	22226	73	2901	10
10	16401	84	035492	51	411595	26	23899	73	1320	81
20	20984	83	021442	50	395870	23	25572	74	9738	80
30	25567	84	007394	48	380149	21	27245	74	8157	81
40	30150	83	993348	46	364429	20	28919	73	6575	82
50	34732	84	979205	43	348713	18	30592	74	4993	83
2	0	83	965264	41	332998	15	32266	74	3410	84
10	39315	84	951225	39	317285	13	33940	75	1828	85
20	43898	83	937185	37	301573	12	35615	75	0245	86
30	48480	84	923153	35	285864	10	37289	76	8662	87
40	53063	83	909121	32	270157	07	38964	75	7079	88
50	57645	84	895091	30	254452	05	40639	76	5496	89
3	0	83	881063	28	238748	04	42315	76	3912	90
10	66809	84	867037	26	223047	01	43990	75	2328	91
20	71392	83	853015	24	207347	00	45666	76	0744	92
30	75974	84	838991	22	191649	8	47342	77	9160	93
40	80556	83	824972	19	175953	6	49019	77	7575	94
50	85138	84	810955	17	160255	4	50696	78	5990	95
4	0	83	796940	15	144566	93	52374	78	4405	96
10	89719	84	782927	13	128876	90	54051	77	2820	97
20	94301	83	768916	11	113187	88	55729	78	1235	98
30	98883	84	754908	08	097501	86	57407	79	5649	99
40	103464	83	740902	06	081817	84	59085	79	4064	00
50	08046	84	726858	04	066134	83	60764	78	2478	01
60	12627	83	712856	02	050454	80	62442	78	4891	02

Grad. 7.

S. M.

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Grad. 19.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6 0	32721790	481	712896	9	1050454	8	5661442	79	9449	86
10	26371	11	698897	106	034776	1567	64121	79	3305	50
20	30952	107	684900	5	019100	5	65800	80	1718	40
30	35533	93	670905	105	003425	72	67480	80	0131	30
40	40114	91	656912	105	987753	71	69159	80	8544	20
50	44695	88	642921	88	972082	68	70839	81	6956	10
7 0	49276	86	628933	86	956414	67	72519	81	5369	053
10	53857	84	614947	84	940747	64	74200	81	3781	50
20	58437	82	600963	82	925083	63	75880	81	2193	40
30	63018	80	586981	80	909220	61	77561	81	0605	30
40	67598	81	573001	78	893759	60	79242	1682	9016	20
50	72179	80	559023	75	878099	57	80924	9447	7427	10
8 0	76759	81	545048	73	862442	55	82606	83	5838	052
10	81340	80	531075	71	846787	54	84288	82	4244	50
20	85920	81	517104	69	831133	51	85971	82	2660	40
30	90500	80	503135	66	815482	49	87653	83	1070	30
40	95080	81	489169	64	799833	47	89333	9446	9480	20
50	99660	80	475205	62	784186	45	91015	9445	7890	10
9 0	32804240	79	461243	60	768541	44	92702	84	6306	051
10	08820	78	447285	58	752897	41	94386	83	4710	50
20	13399	80	433325	56	737256	40	96065	84	3115	40
30	17979	75	419369	54	721610	38	97753	85	1528	30
40	22559	81	405415	51	705975	36	99438	9445	9955	20
50	27138	78	391464	49	690341	34	5701123	9445	8345	10
10 0	31718	75	377815	47	674707	32	02808	86	6754	050
10	36297	74	363568	45	659075	31	04493	86	5162	50
20	40876	73	349623	43	643444	28	06179	85	3570	40
30	45455	72	335680	40	627816	26	07864	86	1978	30
40	50034	71	321740	38	612190	24	09550	87	0385	20
50	54613	70	307802	36	596566	23	11236	9444	8792	10
11 0	59192	69	293866	34	580943	20	12923	87	7199	049
10	63771	68	279932	32	565323	19	14609	87	5606	50
20	68350	67	266000	30	549704	17	16296	88	4013	40
30	72929	66	252070	27	534087	15	17983	9443	2419	30
40	77508	65	238143	25	518472	13	19671	89	0825	20
50	82086	64	224218	23	502859	12	21359	9443	9231	10
60	86665	63	210295	21	487247	10	23048	89	7637	048

Grad. 70

S.M.

Grad. 19.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.				
12 0	32886665	78	111	210195	21	105	487247	159	5723048	88	94431	7637	94	60
10	91243		111	196374	139	156	471638	8	24736	1689	94431	6043	159	50
20	95821			181455	139	5	456030	5	26445	1689		4448	159	40
30	9900400	79		168539	139	4	440425	03	28114	1689		2853	159	30
40	04978			154625	14	02	424822	02	29801	1689		1258	159	20
50	09556			140713	10	9	409220	9	31493	1689		9662	159	10
13 0	14134			126803	08	159	393621	8	33182	89	9442	8067	96	047
10	18712			112895	06	7	378013	7	34872	90		6471	96	50
20	23290			098989	63	93	362426	93	36563	91		4875	96	40
30	27868			085086	01	92	346833	92	38253	90		3279	97	30
40	32445	77		071185	9	90	331241	90	39944	91		1682	97	20
50	37023	78		057286	1389	88	315651	88	41635	90		0085	97	10
14 0	41601			043389	5	87	300063	87	43326	92	9441	8488	98	046
10	46178	77		029494	93	85	284476	85	45018	92		6891	98	50
20	50756	78		015601	91	83	268891	83	46710	93		5294	98	40
30	55333	77		001710	85	82	253308	82	48402	93		3696	98	30
40	59910			0987821	84	78	237726	78	50095	92		2098	98	20
50	64487			0973935	84	77	222148	77	51787	93		0500	98	10
15 0	69065	78		960051	82	75	206571	75	53480	93	9440	8902	99	045
10	73642	77		946169	80	74	190996	74	55173	94		7304	99	50
20	78219			932289	78	71	175422	71	56867	93		5705	99	40
30	82795	76		918411	75	69	159851	69	58560	94		4106	99	30
40	87372	77		904536	73	67	144282	67	60254	94		2507	99	20
50	91949			890663	71	66	128715	66	61948	95		0908	99	10
16 0	96526			876792	69	63	113149	63	63643	94	9439	9308	100	044
10	33001102	76		862923	67	62	097586	62	65337	95		7708	100	50
20	05679	77		849056	65	60	082024	60	67032	95		6108	100	40
30	10255	76		835191	63	59	066464	59	68727	96		4508	101	30
40	14831			821328	60	56	050805	56	70423	97		2907	101	20
50	19408	77		807468	58	55	035349	55	72119	97		1306	101	10
17 0	23984	76		793610	56	52	019794	52	73816	96	9418	9705	01	043
10	28560			779754	54	51	004242	51	75513	97		8104	01	50
20	33136			765900	52	49	988691	49	77209	97		6503	01	40
30	37712			752048	49	46	973142	46	78906	98		4901	01	30
40	42288			738199	47	45	957596	45	80603	98		3299	01	20
50	46864			724352	45	42	942051	42	82301	97		1697	01	10
60	51439	75		710507	45		926509		83998	97		0095		042

Grad. 70.

S.M.

Bb 2

Grad. 19.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
18 0	33051439	76	710507	43	926509	41	5783998	98	80095	02	60
10	56015	75	0695664	41	910968	40	85696	99	8493	01	50
20	60590	76	681821	1385	895428	40	87395	98	6890	1603	40
30	65166	75	668924	9	879891	7	89093	98	5287	30	30
40	69741	76	655147	4	864355	3	90792	1699	3684	04	20
50	74317	455	641313	32	848822	31	92491	1700	2080	03	10
19 0	78892	75	627481	30	833291	30	94190	9436	0477	04	041
10	83467	76	613651	28	817761	28	95890	9436	8873	05	50
20	88041	74	599823	26	802233	26	97590	9436	7269	04	40
30	92617	75	585997	24	786707	24	99290	01	5665	05	30
40	97192	74	572173	22	771183	23	980099	9436	4660	04	20
50	33101767	75	558351	20	755660	21	02691	01	2456	05	10
20 0	06342	74	544531	17	740139	18	04392	9436	0851	06	040
10	10916	75	530714	15	724621	17	06093	9436	9245	05	50
20	15491	74	516899	13	709104	14	07795	9436	7640	05	40
30	20066	75	503086	11	693590	13	09496	01	6035	06	30
40	24640	74	489275	09	678077	11	11196	9436	4425	07	20
50	29215	75	475466	07	662566	10	12900	02	2823	08	10
21 0	33785	74	461659	04	647056	08	14603	9436	1216	07	039
10	38363	75	447855	02	631550	06	16305	9436	9610	06	50
20	42937	74	434053	00	616045	05	18008	9436	8003	07	40
30	47511	75	420253	138	600542	04	19711	9436	6396	08	30
40	52085	74	406455	138	585040	03	21415	9436	4789	09	20
50	56659	75	392659	138	569540	02	23115	9436	3182	10	10
22 0	61233	74	378865	91	554042	1549	24823	9436	1574	08	038
10	65807	75	365074	89	538547	1549	26527	9436	9966	09	50
20	70381	74	351285	87	523053	1549	28232	9436	8358	10	40
30	74954	75	337498	85	507502	1549	29937	9436	6750	11	30
40	79528	74	323713	83	492072	1549	31641	9436	5142	12	20
50	84101	75	309930	80	476584	1549	33346	9436	3533	13	10
23 0	88675	74	296150	78	461098	1549	35051	9436	1924	14	037
10	93248	75	282372	77	445615	1549	36757	9436	0315	15	50
20	97821	74	268595	75	430132	1549	38463	9436	8705	16	40
30	33202394	75	254820	72	414651	1549	40169	9436	7096	17	30
40	06967	74	241048	70	399172	1549	41876	9436	5486	18	20
50	11540	75	227278	68	382695	1549	43583	9436	3876	19	10
60	16113	74	213510	66	368219	1549	45291	9436	2266	20	036

Grad. 70.

J. M.

Grad. 19.

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M.S	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.		
24 0	33216113	73	1213510	1376	104	368219	1547	3	5845291	07	2266	60
10	20686	73	1199744	1376	104	352746	1547	2	46998	07	0655	50
20	15259	72	185980	1376	104	337174	1547	1	48706	07	9045	40
30	29831	72	171218	60	321804	68	50414	09	7434	08	7434	30
40	34404	73	158458	57	306336	66	52122	09	5823	09	5823	20
50	38977	72	144701	55	290870	63	53831	08	4211	08	4211	10
25 0	43549	73	130946	53	275407	62	55539	09	2600	09	2600	035
10	48121	73	117193	51	259945	61	57248	10	0988	10	0988	50
20	52694	73	103442	49	244484	58	58958	09	9376	09	9376	40
30	57266	72	089693	47	229026	57	60667	10	7764	10	7764	30
40	61838	72	075946	45	213569	55	62377	10	6151	10	6151	20
50	66410	71	062201	42	198114	52	64087	11	4538	11	4538	10
26 0	70981	71	048459	40	182662	51	65797	11	2925	11	2925	034
10	75554	71	034719	39	167211	49	67508	10	1312	10	1312	50
20	80126	71	020980	36	151761	47	69218	11	9699	11	9699	40
30	84697	71	007244	34	136315	46	70929	12	8085	12	8085	30
40	89269	71	993510	32	120869	44	72641	12	6472	12	6472	20
50	93841	71	979778	30	105425	42	74353	13	4858	13	4858	10
27 0	98412	72	966048	28	089983	40	76065	13	3243	13	3243	033
10	33302984	71	952320	26	074543	39	77777	14	1629	14	1629	50
20	07555	71	938594	24	059104	36	79490	14	0014	14	0014	40
30	12126	71	924870	22	043668	33	81202	15	8399	15	8399	30
40	16697	72	911148	20	028233	33	82915	15	6784	15	6784	20
50	21269	71	897428	17	012800	31	84628	16	5169	16	5169	10
28 0	25840	71	883711	15	997369	28	86342	14	3553	14	3553	032
10	30411	70	869996	13	981941	27	88055	14	1937	14	1937	50
20	34981	71	856283	11	966514	25	89769	15	0321	15	0321	40
30	39551	70	842572	09	951089	24	91483	15	8705	15	8705	30
40	44123	70	828863	07	935665	22	93198	16	7089	16	7089	20
50	48694	70	815156	05	910243	21	94913	16	5472	16	5472	10
29 0	53264	71	801451	02	904822	17	96629	15	3855	15	3855	031
10	57835	70	787749	00	889405	16	98344	16	2238	16	2238	50
20	62405	70	774049	1369	873989	14	990060	17	0621	17	0621	40
30	66975	71	760351	3	858575	12	01776	17	9003	17	9003	30
40	71546	70	746655	3	843163	10	03492	18	7385	18	7385	20
50	76116	70	732962	91	827753	07	05209	16	5767	16	5767	10
60	80686		719271		812346		06925		4149		4149	30

Grad. 70.

S.M

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Grad. 19.

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M.S	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
30 0	33380686	4570	719271	109	812346	16	5906925	17	4149	60	
10	85256		705582	109	796940	15	08642	18	2531	50	
20	89826		691895	108	781535	14	10360	17	0912	40	
30	94396		678210	83	766133	01	12077	17	9293	30	
40	98966		664527	82	750732	00	13795	17	7674	20	
50	33403535	69	650845	80	735332	8	15513	17	6055	10	
31 0	08105	70	637165	78	719934	159	17231	19	4435	20	029
10	12674	69	623487	76	704537	4	18950	18	2815	50	
20	17244	70	609811	74	689143	93	20668	19	1195	40	
30	21813	70	596137	71	673750	90	22387	19	9575	30	
40	26383	69	582466	68	658360	88	24106	20	7955	20	
50	30952	69	568798	66	642972	86	25826	20	6334	10	
32 0	35521		555132	64	627586	84	27546	21	4713	028	
10	40090		541468	62	612202	83	29266	21	3092	50	
20	44659		527306	60	596819	80	30987	20	1471	40	
30	49228		514146	58	581435	79	32707	21	9849	30	
40	53797		500488	55	566060	76	34428	21	8227	20	
50	58366	68	486833	53	550684	75	36149	21	6605	10	
33 0	62934	69	473180	51	535309	73	37871		4983	027	
10	67503	68	459529	49	519936	71	39593		3361	50	
20	72071	69	445880	47	504565	69	41315		1738	40	
30	76640	68	432233	44	489196	67	43037	23	0115	30	
40	81208		418589	42	473829	64	44760	22	8492	20	
50	85776	69	404947	40	458465	63	46482	23	6869	10	
34 0	90345	68	391307	39	443102		48205	24	5245	026	
10	94913		377668	37	427739	60	47939	23	3621	50	
20	99481		364031	36	412379		51652	24	1997	40	
30	33504045		350395	34	397019	58	53376		0373	30	
40	08617	67	336761	33	381661	57	55100		8749	20	
50	13184	68	323128	31	366304	56	56824	25	7124	10	
35 0	17752		309497	29	350948	53	58549	24	5495	025	
10	22320	67	295868	26	335595	51	60273	25	3874	50	
20	26887	68	282242	24	320244	49	61998		2249	40	
30	31455	67	268618	22	304895	48	63723	26	0623	30	
40	36022	68	254996	19	289547	45	65449		8997	20	
50	40590	67	241377	16	274202	43	67175	27	7371	10	
60	45257		227761		258859		68902		5745	024	

Grad. 70.

S.M

Grad. 19.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
36 0	33145157	4567	1227761	14	105	258859	40	5968902	26	5745	60
10	49724		114147	11	105	243519	1533	70628	26	4119	50
20	54291		200536	11	105	228181	1533	72355	26	2492	40
30	58858		184927	11	105	212845	1533	74082	26	0865	30
40	63425		173320	7	105	197511	4	75809	28	9238	20
50	67992		159716	02	105	182179	30	77537	28	7613	10
37 0	72559		146114	01	105	166849	29	79265	28	5983	18
10	77126	66	132513	9	105	151520	28	80993	19	4356	023
20	81692	67	118914	39	105	136192	25	82722	18	2728	40
30	86259	66	105317	5	105	120867	24	84450	29	1099	30
40	90825	67	091722	93	105	105543	22	86179	29	9471	20
50	95392	66	078129	92	105	090221	21	87908	29	7842	10
38 0	99958		064537	85	105	074900	19	89637	30	6313	022
10	33604524		050948	87	105	059581	16	91367	30	4584	50
20	09090		037361	85	105	044265	15	93096	30	2955	40
30	13656		023776	83	105	028950	14	94826	31	1326	30
40	18222		010193	81	105	013636	12	96557	31	9696	20
50	22788		996612	78	105	998324	09	98288	31	8066	10
39 0	27354		983034	78	105	983015	07	6000015	32	6436	021
10	31920		969458	74	105	967708	06	01750	32	4805	50
20	36481		955884	72	105	952402	03	01482	31	3175	40
30	41051		942311	70	105	937099	02	05213	32	1544	30
40	45617		928742	65	105	921797	01	06945	32	9913	20
50	50182	66	915173	67	105	906496	00	08677	33	8281	10
40 0	54748	55	901606	64	105	891196	6	10410	32	6650	020
10	59313		888042	62	105	875900	119	12142	33	5018	50
20	63878		874480	60	105	860605	3	23875	33	3386	40
30	68443		860920	58	105	845312	92	15608	34	1754	30
40	73008		847362	56	105	830020	90	17342	34	0522	20
50	77573		833806	54	105	814730	89	19076	35	8489	10
41 0	82135		820252	51	105	799441	85	20811	35	6856	019
10	86703		806701	49	105	784156	84	22545	35	5223	50
20	91261		793152	48	105	768872	83	24280	35	3590	40
30	95831	65	779604	46	105	753589	81	26015	36	1956	30
40	33700397	64	766058	44	105	738308	80	27750	36	0323	20
50	04961	65	752514	42	105	723028	78	29486	36	8689	10
60	09526		738972		105	707750		31222	36	7054	018

Grad. 70.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
42 0	33709526	64	738972	40	707750	6	6031222	36	9414	7054	60
10	14090	108	725432	7	692474	1527	32958	37	5420	34	50
20	18654	65	711895	5	677100	4	34695	30	3785	35	40
30	23219	4564	698360	3	661929	70	36431	173	2151	34	30
40	27783	63	684827	31	646659	68	38168	173	0516	35	20
50	32347	64	671296	29	631391	66	39905	9413	8880	36	10
43 0	36911	63	657767	27	616125	65	41642	38	7245	35	017
10	41475	64	644240	25	600860	63	43380	38	5605	1656	50
20	46038	64	630715	23	585597	61	45118	39	3975	40	40
30	50602	63	617192	21	570336	60	46856	39	2335	30	30
40	55166	64	603671	18	555076	56	48595	39	0701	20	20
50	59729	64	590153	16	539820	55	50333	39	8061	10	10
44 0	64293	63	576637	14	524565	53	52072	40	7427	016	10
10	68856	64	563123	12	509312	52	53811	40	5790	50	40
20	73419	63	549611	10	494060	50	55551	41	4153	38	30
30	77983	63	536101	09	478810	49	57291	41	2515	37	20
40	82546	62	522592	07	463561	47	59031	42	0876	38	10
50	87109	62	509085	05	448314	45	60771	42	9240	39	015
45 0	91672	61	495580	02	433069	43	62511	43	7603	30	50
10	96235	62	482076	00	417826	41	64252	42	5963	38	40
20	33800798	61	468578	1540	402585	40	65993	41	4325	39	30
30	05360	61	455080	8	387345	37	67735	41	2686	40	20
40	09923	62	441584	4	372108	36	69476	42	1047	40	10
50	14486	63	428090	91	356872	33	71218	43	9407	39	014
46 0	19048	63	414595	89	341639	31	72960	43	7768	50	40
10	23611	62	401110	87	326408	30	74702	43	6128	40	30
20	28173	61	387623	85	311178	28	76445	44	4488	30	20
30	32735	61	374138	84	295950	27	78188	44	2848	20	10
40	37297	62	360654	82	280723	26	79931	44	1208	41	013
50	41859	62	347172	80	265457	23	81675	45	9567	40	0
47 0	46421	61	333692	78	250274	22	83418	43	7926	30	50
10	50983	61	320214	76	235052	21	85162	45	6485	20	40
20	55545	61	306738	74	219831	18	86907	44	4644	10	30
30	60107	61	293264	71	204613	16	88651	45	3003	41	20
40	64669	62	279773	69	189397	14	90395	45	1361	30	10
50	69232	62	266224	67	174183	12	92141	46	9719	20	0
60	73794	61	252857	65	158951	10	93886	46	8077	10	012

Grad. 70.

J.M.

Grad. 19.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48 0	33873793	62	100	101	158971	11	6093886	46	8077	69
10	72354	100	239392	101	143760	8	95632	45	6435	50
20	82195	46	235929	146	128552	5	97377	46	4792	40
30	87476	61	212467	59	113344	5	99123	1747	3149	30
40	92037	62	199008	57	098139	04	6100869	1747	1506	20
50	96599	61	185551	55	082935	02	02611	9407	9863	10
49 0	33901160	61	172096	53	067733	00	04363	9407	8229	0 11
10	05721	60	158643	51	052533	15	06110	8	6576	50
20	10282	60	145192	49	037334	19	07855	47	4932	40
30	14842	61	131743	47	022138	9	09605	48	3288	30
40	19403	61	118296	44	006943	92	11353	48	1643	20
50	23964	60	104851	42	991751	91	13101	49	9999	10
50 0	28525	60	091410	40	976560	88	14850	48	8354	0 10
10	33085	61	077970	38	961372	87	16598	49	6709	50
20	37645	60	064532	36	946185	85	18347	50	5064	40
30	42206	60	051096	35	931000	83	20091	51	3418	30
40	46766	60	037661	33	915815	81	21841	51	1773	20
50	51326	60	024228	31	900632	79	23596	51	0127	10
51 0	55886	60	010797	28	885451	75	25346	51	9481	0 9
10	60446	60	997369	26	870272	76	27097	50	6834	50
20	65006	60	983943	24	855096	75	28847	51	5188	40
30	69566	60	970515	21	839921	73	30598	51	3541	30
40	74126	60	957097	21	824748	72	32349	52	1894	20
50	78686	60	943676	19	809576	71	34100	52	0247	10
52 0	83246	54	930257	16	794405	68	35852	9404	8599	0 8
10	87805	60	916841	14	779237	66	37604	9404	6952	47
20	92365	59	903427	12	764071	65	39356	53	5304	40
30	96924	59	890015	10	748906	62	41109	53	3656	30
40	34001483	60	876601	09	733741	61	42861	52	2007	20
50	06043	59	863196	07	718581	61	44614	54	0359	10
53 0	10602	59	849789	04	703421	59	46368	9403	8710	0 7
10	15161	58	836385	02	688264	57	48121	54	7061	50
20	19720	58	822983	00	673108	54	49875	54	5412	40
30	24275	58	809583	139	657954	52	51629	55	3762	30
40	28838	59	796185	6	642802	51	53383	55	2113	20
50	33396	59	782789	3	627651	48	55138	55	0463	10
60	37955	59	769396		612503		56893		28813	0 6

Grad. 70.

S.M.

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Grad. 19.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54°	34037955	59	769396	92	612503	7	6156893	59	908813	60
10	42514	58	756004	91	597356	1514	58648	58	7162	50
20	47072	59	742615	90	582211	3	60404	57	5512	40
30	51631	58	729227	89	567068	42	62159	56	3861	30
40	56189	57	715841	88	551926	41	63915	55	2210	20
50	60747	56	702456	87	536785	40	65671	54	6559	10
55°	65305	59	689073	86	521645	36	67428	53	8907	0
10	69864	58	675693	85	506509	35	69184	52	7256	50
20	74422	57	662315	84	491374	34	70941	51	5604	40
30	78980	56	648939	83	476241	33	72698	50	3952	30
40	83537	55	635566	82	461110	31	74456	49	2300	20
50	88095	54	622195	81	445981	29	76214	48	6647	10
56°	92653	53	608826	80	430854	27	77972	47	8994	0
10	97211	52	595459	79	415728	26	79731	46	7341	50
20	34101768	51	582094	78	400605	23	81489	45	5688	40
30	06326	50	568731	77	385483	22	83248	44	4035	30
40	10883	49	555370	76	370363	20	85007	43	2381	20
50	15440	48	542010	75	355244	19	86766	42	0727	10
57°	19998	47	528652	74	340126	18	88526	41	9073	0
10	24555	46	515290	73	325010	16	90286	40	7419	50
20	29112	45	501942	72	309895	15	92047	39	5764	40
30	33665	44	488591	71	294784	11	93807	38	4110	30
40	38226	43	475242	70	279674	10	95568	37	2455	20
50	42783	42	461895	69	264566	08	97329	36	0800	10
58°	47339	41	448550	68	249460	06	99090	35	9144	0
10	51896	40	435207	67	234355	05	6208852	34	7488	50
20	56453	39	421866	66	219253	02	02613	33	5833	40
30	61009	38	408527	65	204152	01	04375	32	4177	30
40	65566	37	395190	64	189053	9	06137	31	2520	20
50	70122	63	381855	33	173955	1509	07900	63	0864	10
59°	74678	32	368522	31	158859	6	09663	62	9207	0
10	79235	31	355191	30	143765	94	11426	61	7550	50
20	83791	30	341862	29	128672	93	13190	60	5893	40
30	88347	29	328535	28	113582	90	14953	59	4236	30
40	92903	28	315210	27	098493	89	16717	58	2578	20
50	97459	27	301886	26	083405	88	18481	57	0920	10
60	342020141	26	288564	25	068318	87	20246	65	69262	0

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Grad. 20.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	34102014	56	288564	20	101	068318	6210246	64	9296	58
10	06570	56	275244	7	1508	053234	22010	65	7604	59
20	11126	55	261927	131	5	038152	23775	65	5945	59
30	15681	56	248613	3	79	023072	25540	1766	4287	58
40	20237	55	235299	11	77	007993	27306	67	2628	59
50	24792	55	221988	09	100	992916	29072	67	0969	60
1	29347	56	208679	07	100	977841	30838	67	9309	59
10	33903	455	195372	05	71	962767	32605	66	7650	60
20	38458	455	182067	03	70	947696	34371	67	5990	60
30	43013	54	168764	01	68	932626	36138	68	4330	61
40	47568	55	155463	9	66	917558	37905	68	2669	60
50	52123	54	142164	7	65	902492	39672	68	1009	60
2	56678	54	128867	5	62	887427	41440	67	9348	61
10	61232	55	115572	.93	61	872365	43207	68	7687	59
20	65787	55	102279	91	59	857304	44975	68	6026	60
30	70342	54	088988	89	58	842245	46743	69	4365	62
40	74896	55	075699	87	56	827187	48511	69	2703	62
50	79451	54	062412	85	55	812131	50281	70	1041	62
3	84005	54	049127	83	52	797076	52051	70	9379	63
10	88559	55	035844	81	51	782024	53820	69	7717	63
20	93113	55	022563	79	49	766973	55590	70	6055	63
30	97668	54	009284	77	47	751924	57360	71	4392	64
40	34302222	53	996007	75	46	736875	59130	71	2729	64
50	06775	54	982732	73	44	721831	60901	72	1066	64
4	11329	54	969459	71	42	706787	62672	72	9403	65
10	15883	53	956188	69	41	691745	64443	72	7739	64
20	20437	53	942919	67	38	676794	66215	71	6075	64
30	24990	54	929652	65	37	661666	67986	71	4411	65
40	29544	53	916387	64	36	646625	69758	72	2747	65
50	34097	54	903123	62	35	631593	71530	73	1083	65
5	38651	53	889861	59	31	616558	73303	72	9418	66
10	43244	53	876602	57	30	601527	75075	73	7753	66
20	47757	54	863345	55	28	586497	76848	73	6088	66
30	52311	53	850090	53	27	571469	78621	74	4423	67
40	56864	52	836837	51	25	556442	80395	74	2757	67
50	61417	52	823586	49	23	541417	82169	74	1091	67
60	65969	52	810337	47		526394	83943		09425	68

Grad. 68.

S.M

Grad. 20.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6 0	34365969	4553	1810337	7	526394	12	6283943	75	9425	60
10	70522		797090	12	511372	9	85718	75	7759	50
20	75075		783845	3	496353	1501	87492	74	6093	40
30	79628	52	770602	41	481335	6	89267	1775	4426	30
40	84180	53	757361	39	466319	14	91042	76	2759	20
50	88733	52	744122	38	451305		92817	76	1092	10
7 0	93285	52	730884	36	436291	11	94593	75	9425	68 053
10	97837	53	717648	33	421280	09	96368	76	7759	50
20	34402390	52	704415	31	406271	07	98144	76	6089	40
30	06942		691184	29	391264	06	99920	77	4426	30
40	11494		677955	27	376258	04	6301697		2759	20
50	16046		664728	25	361254	03	03474	78	1085	10
8 0	20598		651503	23	346251	00	05252	77	9416	69 052
10	25150		638180	21	331251		07029	78	7747	50
20	29702		625059	19	316252	1499	08807		6078	40
30	34253	51	611840	17	301255	5	10585		4409	30
40	38805	52	598623	16	286260		12363	79	2739	20
50	43356	52	585407	14	271265	93	14142		1069	10
9 0	47903	51	572193	11	256272	90	15921		9399	051
10	52459		558982	09	242281	89	17700	80	7729	50
20	57010	52	545773	08	226253	87	19480	79	6059	40
30	61562	51	532565	06	211306	84	21259	80	4388	30
40	66113		519359	04	196320	84	23039		2717	20
50	70664		506155	02	181336	83	24819	81	1046	10
10 0	75215		492953	00	166353	81	26600		9375	050
10	79766	50	479753	13	151372	78	28381	80	7704	50
20	84316	51	466555	11	136394	77	30161	81	6032	40
30	88867		453359	9	121417	75	31942	82	4360	30
40	93418	50	440166	72	106442	74	33724		2688	20
50	97968	51	426974	89	091468	71	35506		1055	10
11 0	34502519	51	413785	87	076497	70	37288	83	9343	049
10	07069	50	400598	85	061527	67	39071	82	7070	50
20	11619		387413	84	046560		40853	83	5997	40
30	16170	51	374229	82	031593	65	42636		4523	30
40	20720	50	361047	81	016628	64	44419		2690	20
50	25270		347866	78	001664	62	46202	84	0970	10
60	29820		334688		99986702		47986		49302	048

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S.M.

Grad. 20.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
12 0	34529820	50	334688	1316	99986702	1495	6347986	83	9302	60
10	34370	106	321512	1317	71743	1496	49769	84	7628	50
20	33920	49	308337	1318	56784	1497	51553	85	5954	40
30	43469	50	295165	70	41828	55	53337	86	4279	30
40	48019	50	281995	67	16873	52	55122	85	2604	20
50	52569	49	268828	64	11921	50	56907	86	0929	10
13 0	57118	50	255664	63	99896971	48	58693	86	9254	047
10	61668	4549	242501	61	82023	47	60478	85	7579	50
20	66217	48	229340	60	67076	46	62264	84	5903	40
30	70766	48	216180	58	52130	44	64050	83	4227	30
40	75315	48	203022	57	37186	43	65836	82	2551	20
50	79864	48	189865	55	22242	42	67623	81	0874	10
14 0	84413	48	176710	53	07300	40	69410	80	9198	046
10	88962	48	163557	51	99792360	39	71197	88	7521	50
20	93511	48	150406	49	77421	36	72985	87	5844	40
30	98060	48	137257	46	62485	34	74772	87	4267	30
40	14602609	48	124111	44	47551	32	76560	88	2489	20
50	07157	48	110967	42	32619	31	78348	89	0811	10
15 0	11706	49	097825	40	17688	28	80137	88	9134	045
10	16254	48	084685	38	02760	27	81925	89	7453	50
20	20803	48	071547	37	99687833	26	83714	90	5777	40
30	25351	47	058410	35	72907	25	85503	90	4099	30
40	29899	47	045275	33	57982	23	87293	91	2420	20
50	34447	47	032142	31	43059	21	89083	91	0741	10
16 0	38995	105	019011	29	28538	20	90873	91	9061	044
10	43543	105	005882	27	13218	17	92664	90	7382	50
20	48091	105	979630	25	99598301	16	94454	91	5702	40
30	52639	47	966507	23	83385	14	96245	92	4021	30
40	57186	48	953386	21	68471	12	98036	92	2342	20
50	61734	47	940268	18	53559	10	99827	92	0663	10
17 0	66282	47	927151	17	38649	09	6401619	93	8981	81
10	70829	48	914037	14	23740	06	03411	93	7301	043
20	75376	48	900924	13	08834	04	05203	93	5620	50
30	79924	47	887813	11	99493928	03	06996	93	3938	40
40	84471	47	874703	10	79024	02	08785	93	2157	30
50	89018	47	861595	08	64121	01	10582	93	0575	20
60	93565	47	848486	06	492201	00	12375	93	88893	10

Grad. 69.

S.M.

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Grad. 20.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	34693565	4547	861595	6	99449220	09	6412375	94	8893	60
10	98112	4547	848489	1310	34320	147	14169	93	7211	82
20	34702659	4547	835385	1310	19423	148	15962	94	5529	40
30	07206	46	822284	9	04526	149	17756	94	3846	30
40	11753	46	809185	9	99389635	3	19550	93	2164	20
50	16299	46	796088	7	74743	92	21345	1795	0481	10
19 0	20846	47	782993	5	59853	90	23140	93	8798	84
10	25392	47	769900	91	44965	88	24935	96	7114	50
20	29939	46	756809	90	30078	87	26731	95	5430	40
30	34485	46	743719	88	15193	85	28526	96	3747	30
40	39031	46	730631	86	00309	84	30322	96	2063	20
50	43577	45	717545	85	99285427	82	32118	97	0378	10
20 0	48123	45	704460	82	70545	78	33915	96	8694	040
10	52669	45	691378	80	55667	77	35711	97	7005	50
20	57215	45	678298	78	40790	75	37508	97	5324	40
30	61761	45	665220	76	25915	74	39305	98	3639	30
40	66307	45	652144	74	11041	72	41103	98	1953	20
50	70853	45	639070	71	99196169	69	42901	99	0268	10
21 0	75398	46	625999	70	81300	66	44699	99	8582	039
10	79944	45	612929	68	66431	66	46498	98	6896	50
20	84489	45	599861	66	51565	65	48296	99	5210	40
30	89034	46	586795	64	36700	63	50095	99	3523	30
40	93580	45	573731	63	21837	62	51894	1800	1836	20
50	98125	45	560668	61	06975	61	53693	9374	0145	10
22 0	34802670	44	547607	58	99092114	57	55493	9374	8462	038
10	07215	44	534549	56	77257	56	57292	9374	6775	50
20	11760	44	521493	54	62401	54	59092	9374	5087	40
30	16305	44	508439	53	47547	53	60892	01	3399	30
40	20850	44	495386	51	32693	51	62693	01	1711	20
50	25394	44	482335	49	17841	51	64494	02	0023	10
23 0	29939	45	469286	47	02990	51	66296	02	8335	037
10	34483	44	456239	45	98988142	48	68097	01	6646	50
20	39028	45	443194	43	73295	47	69899	02	4957	40
30	43572	44	430151	41	58450	45	71701	03	3268	30
40	48116	45	417110	39	43607	43	73503	9372	1578	20
50	52661	44	404071	37	28765	42	75306	9372	9889	10
60	57205	44	391034		13925	40	77109		8199	026

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S.M.

Grad. 20.

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M.S.	Sin.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sin.	D.
24 0	34857205	+	391034	5	98913925	18	6477109	03	8199	60
10	61749	+	377999	5	98899087	18	78912	03	6509	9
20	66293	+	364966	5	84250	18	80716	04	4819	40
30	70837	43	351935	30	69416	31	82519	03	3128	30
40	75380	44	338905	28	54582	32	84323	04	1437	20
50	79924	44	325877	26	39750	31	86127	05	9746	10
25 0	84468	43	312851	24	24919	28	87932	04	8055	035
10	89011	44	299827	22	10091	27	89736	05	6364	50
20	93555	43	286805	20	98795264	25	91541	05	4673	40
30	98098	43	273785	18	80439	24	93346	06	2987	92
40	34902641	44	260767	16	65615	22	95152	06	1289	20
50	07185	43	247751	13	50793	20	96958	07	9596	93
16 0	11728	43	234738	12	35973	18	98765	06	7904	92
10	16271	43	221726	10	21155	17	6500571	07	6211	93
20	20814	43	208716	08	06338	15	02378	07	4518	034
30	25357	43	195708	06	98691523	13	04185	08	2825	40
40	29899	43	182702	05	76710	10	05992	08	1132	30
50	34442	43	169697	03	61897	08	07800	08	9438	20
27 0	38985	42	156694	00	47087	07	09607	07	7745	94
10	43527	42	143694	00	32279	06	11415	08	6051	93
20	48070	42	130696	00	17472	05	13224	08	4356	033
30	52612	42	117699	00	02667	04	15032	09	2662	94
40	57154	42	104704	94	98587863	03	16841	09	0967	95
50	61697	42	091710	91	73060	00	18650	09	9272	20
28 0	66239	42	078719	89	58260	00	20459	10	7577	95
10	70781	42	065730	87	43461	9	22169	10	5882	032
20	75323	42	052743	85	28664	1479	24079	10	4186	50
30	79865	42	039758	84	13869	5	25889	11	2492	40
40	84407	42	026774	82	98499074	92	27700	11	0795	96
50	88948	42	013792	80	84282	91	29510	11	9099	20
29 0	93490	41	000812	77	69491	88	31321	12	7402	97
10	98032	41	987835	75	54703	87	33132	12	5705	031
20	35002573	41	974860	73	39916	84	34944	12	4009	96
30	07114	41	961887	72	25132	82	36755	12	2312	40
40	11656	41	948915	70	10348	81	38567	13	0615	97
50	16197	41	935945	68	98395566	81	40370	13	8917	30
60	20738	41	722977	68	80785	81	42192	13	7219	20

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S.M.

Grad. 20.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
30 0	35010738	454	9122977	16	98380785	147	6541192	12	93667218	97	60
10	25279		9100011	3	60007	6	44004	13	8521	98	50
20	29820		897048	2	51231	5	45817	14	3823	99	40
30	34361		884086	60	36456	74	47630	15	2114	98	30
40	38902		8711126	59	21682	73	49444	16	0440	100	20
50	43443		858167	57	06909	72	51258	17	8727	1099	10
31 0	47983	40	845210	54	9829137	68	53073	18	7018	1099	029
10	52524	41	832256	52	77369	67	54887	19	5329	1700	50
20	57064	40	819304	51	62602	66	56702	20	3629	1700	40
30	61605	40	806353	49	47836	64	58517	21	1929		30
40	66145	40	793404	47	33072	63	60331	22	0229		20
50	70685	41	780457	45	18309	60	62148	23	8529		10
32 0	75226	40	767512	43	03549	59	63963	24	6829	01	028
10	79766		754569	40	98188790	57	65779	25	5128		50
20	84306		741629	39	74031	55	67596	26	3427		40
30	88846	39	728690	37	59278	54	69412	27	1726		30
40	93385	40	715753	36	44524	53	71229	28	0025		20
50	97925		702817	34	29771	51	73046	29	8324		10
33 0	35102465	39	689883	31	15020	49	74863	30	6622	02	017
10	07004	40	676952	29	00271	46	76681	31	4920		50
20	11544	39	664023	28	98085523		78498	32	3218		40
30	16083	40	651095	26	70779	44	80316	33	1515	03	30
40	20623	39	638169	25	56035		82134	34	9813	02	20
50	25162		625144	22	41291	41	83953	35	8110	03	10
34 0	29701		612322	20	26550	39	85772	36	6407		026
10	34240		599402	18	11811	38	87591	37	4704		50
20	38779		586484	16	97997073	35	89411	38	3000	04	40
30	43318		573568	15	82338		91230	39	1297	03	30
40	47857		560653	13	67603	33	93050	40	9593	04	20
50	52396	38	547740	11	52870	32	94870	41	7889	05	10
35 0	56934	39	534829	08	38138	29	96691	42	6184	03	025
10	61473		521921	06	23405	27	98512	43	4480	04	50
20	66012	38	509015	04	08682	26	6600333	44	3775	05	40
30	70550		496111	03	97892951	24	02155	45	1070		30
40	75088	39	483208	02	75232	23	03976	46	9365		20
50	79627	38	470305	00	64508	22	05798	47	7659	06	10
60	84165		457406		49780	21	07620	48	5954	05	024

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S.M

Grad. 21.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
36 0	55184165	4538	457406	180	97849786	10	6607610	23	935954	06	60
10	88703		444509	180	35066	17	09443	22	93604248	06	50
20	93241		431614	93	20349	14	15265	23	2542	07	40
30	97779		418721	92	05633	5	13088		0835	06	30
40	35202317		405829	90	97790918	14	14911		93599189	10	20
50	06855		392939	88	76204	12	16735		7421	10	10
37 0	11391	37	380051	86	61491	10	18559	184	5715	023	
10	15930	38	367165	84	46782	09	20323	25	4008	38	50
20	20467	37	354281	82	32073	06	22108	14	2300	07	40
30	25005	38	341399	80	17367	05	24032	25	0593	08	30
40	29542	37	328519	78	02662	03	25857		8885	10	20
50	34079	38	315641	77	97687959	01	27682		7177	09	10
38 0	38617	37	302764	75	73257	01	29507	26	5468	08	022
10	43154		289889	73	58556	18	31333	25	3760	09	50
20	47691		277016	71	43858	16	33158	26	2051		40
30	52228		264145	69	29161	7	34984	27	0342		30
40	56765	36	251276	67	14465	6	36811		8633		20
50	61301	37	238409	64	97599771	94	38638		692	10	10
39 0	65838	36	225545	63	85080	91	40465		5214	021	
10	70375		212682	61	70390	90	42292		3504	50	
20	74911	36	199821	59	55702	88	44119	28	1794	40	
30	79448	37	186962	58	41015	87	45947		0084	30	
40	83984	36	174104	56	26329	86	47775		8373	11	20
50	88520		161248	54	11645	84	49603		5663	10	10
40 0	93056	37	148394	52	97496962	83	51432	29	93564952	11	020
10	97593	36	135542	50	82282	80	53260	28	3240	12	50
20	35302129		122692	48	67603	79	55089	29	1529	12	40
30	06665	35	109844	46	52926	77	56918		9817	11	30
40	11300	36	096998	44	38250	76	58748	30	8106	11	20
50	15736		084154	42	23576	74	60578		6394	12	10
41 0	20271	35	071312	40	08903	73	62409	31	4681	13	019
10	24808		058472	38	97394233	70	64239	30	2969	13	50
20	29343	35	045634	37	79564	69	66070	31	1256		40
30	33879	36	032797	35	64896	68	67901		9543		30
40	38412	35	019962	34	50230	66	69732	32	7830		20
50	42949		007128	32	35564	64	71564		6117		10
60	47424		3994296		20900		73396		4403		018

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S.M.

Dd

Grad. 20.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 0	5347484	36	994296	30	97320900	62	6673896	32	9354403	60
10	52010	35	981466	18	06238	61	75228	33	2689	50
20	56555	34	968618	6	97291577	148	77061	32	0975	40
30	61089	33	955812	24	76919	146	78893	31	93261	30
40	65624	32	942988	21	62261	4	80726	30	7347	20
50	70159	31	930167	19	47608	53	82559	34	5832	10
43 0	74694	34	917348	18	32955	51	84393	33	4117	017
10	79228	33	904530	16	18304	50	86226	34	2402	50
20	83763	32	891714	14	03654	48	88060	33	0686	40
30	88297	31	878900	12	97189006	47	89894	32	8971	30
40	92832	30	866088	11	74359	46	91729	31	7255	20
50	97366	29	853277	09	59713	44	93564	30	5539	10
44 0	35401900	30	840468	07	45069	43	95399	36	3823	016
10	06434	29	827661	05	30426	42	97235	35	2106	50
20	10968	28	814856	03	15786	40	99070	34	0390	40
30	15502	27	802053	01	01147	39	6700906	36	8673	30
40	20036	26	789252	19	97086510	37	01742	31	6936	20
50	24570	25	776453	17	71875	35	04578	30	5135	10
45 0	29104	33	763656	5	57241	32	06415	37	3521	015
10	33637	34	750861	94	42609	31	08252	38	1803	50
20	38171	33	738067	92	27977	29	10090	36	0083	40
30	42704	34	725275	90	13348	28	11927	37	8367	30
40	47238	33	712485	88	96998720	26	13765	38	6645	20
50	51771	32	699697	86	84094	24	15603	39	4930	10
46 0	56304	31	686911	84	69470	23	17441	39	3211	014
10	60837	30	674127	82	54847	20	19280	38	1492	50
20	65370	29	661345	81	40227	18	21118	37	9773	40
30	69903	28	648564	79	25607	16	22957	36	8652	30
40	74436	27	635785	77	16985	14	24796	35	6333	20
50	78969	26	623008	75	96896372	12	26636	40	4653	10
47 0	83502	31	610233	73	81757	10	28476	41	2893	013
10	88034	30	597460	71	67144	8	30316	42	1173	50
20	92567	29	584689	69	52532	6	32157	40	9452	40
30	97099	28	571920	67	37923	4	33997	41	7731	30
40	35903632	27	559153	66	23315	2	35838	42	6010	20
50	106164	26	546387	64	08708	0	37679	43	4289	10
60	10696	25	533623	62	96794102	0	39521	44	2568	012

Grad. 69.

S.M.

Grad. 20.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48	35510696	4332	533623	62	96794102	1400	6739521	42	2568	60
10	35328		520861	60	79499		41362	42	0846	50
20	19760		508101	58	64897		43204	42	9124	40
30	24152		495343	56	50297		45046	42	7402	30
40	28824		482587	55	35698		46889	42	5679	20
50	33356		469831	53	21100		48732	44	3957	10
49	37888	31	457079	51	66503	94	50576	44	2234	0 11
10	42419	32	444328	49	96691909	93	52419	43	0511	50
20	46951	32	431579	47	77316	91	54263	44	8788	40
30	51483	32	418832	45	62723	89	56107	44	7064	30
40	56014	31	406087	43	48136	88	57951	45	5341	20
50	60545	31	393344	40	33548	84	59796	44	3617	10
50	65076		380604	38	18964	83	61640	45	1893	0 10
10	6960		367866	37	4381		63485	46	0163	50
20	74138		355129	36	96589798	82	65331	45	8444	40
30	78665		342393	34	75217	80	67176	46	6715	30
40	83200		329659	33	60637	79	69022		4994	20
50	87731		316926	31	46058	77	70868		3265	10
51	92262	30	304195	28	31481	75	72714	47	1543	0 9
10	96792	31	291467	26	16906	74	74561		9817	50
20	35601345	30	278741	25	02333	72	76408	47	8091	40
30	05853	31	266016	23	96487761	71	78255	48	6365	30
40	10384	30	253293	22	73194	69	80103	47	4639	20
50	14914	30	240571	19	58621	67	81950	48	2913	10
52	19444		227852	16	44054	64	83798	48	1186	0 8
10	23974		215136	15	29490		85646	49	9459	50
20	28504		202421	13	14926	62	87495	48	7732	40
30	33034		189707	12	00364	61	89343	49	6004	30
40	37564		176995	10	96385803	59	91192		4277	20
50	42094		164285	09	71244		93041	50	2549	10
53	46624	29	151576	07	56685	56	94891	49	0823	0 7
10	51153	30	138869	07	42129	55	96740	50	9092	50
20	55683	29	126164	05	27574	53	98590		7364	40
30	60212		113463	03	13021	52	6800440	51	5635	30
40	64741	30	100760	01	96298469	49	02191		3906	20
50	69271	29	088062	00	83920	48	04142	52	2177	10
60	73800		075366	00	69372		05994		0447	0 6

Grad. 69.

S.M

Dd 2

Grad. 20.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54°	35673800	+	10755366	136	96169372	144	6805994	51	0447	60
10	78329	+	1061672	136	54827	144	07845	51	8718	50
20	82858	+	1049979	136	40282	144	09697	51	6988	40
30	87387	+	1037287	90	25738	42	11549	52	5258	30
40	91916	+	1024597	88	11196	41	13401	53	3528	20
50	96445	+	1011909	87	96196655	40	15254	53	1797	10
55°	35700973	+	10999222	85	82115	38	17107	54	0066	0
10	05502	+	10986537	83	67577	37	18960	54	8335	50
20	10030	+	10973854	80	53040	37	20814	53	6604	40
30	14559	+	10961174	78	38507	33	22667	53	4873	30
40	19087	+	10948496	76	23975	32	24521	54	3141	20
50	23616	+	10935820	74	09445	30	26375	54	1409	10
56°	28144	+	10923146	72	96094917	28	28229	55	9677	0
10	32672	+	10910474	71	80390	27	30084	55	7945	50
20	37200	+	10897804	70	65866	24	31938	54	6213	40
30	41728	+	10885135	69	51342	23	33793	55	4480	30
40	46256	+	10872468	67	36819	22	35649	56	2747	20
50	50783	+	10859802	65	22297	21	37505	56	1014	10
57°	55311	+	10847137	63	07776	20	39361	57	9281	0
10	59835	+	10834474	60	95993256	16	41218	56	7547	50
20	64366	+	10821814	58	78740	15	43074	56	5813	40
30	68894	+	10809156	56	64225	13	44931	57	4079	30
40	73421	+	10796500	54	49712	11	46788	58	2345	20
50	77948	+	10783846	52	35201	10	48645	58	0611	10
58°	82475	+	10771194	51	20691	09	50503	58	8876	0
10	87002	+	10758543	49	06182	08	52361	59	7141	50
20	91529	+	10745894	47	95891674	05	54220	58	5406	40
30	96056	+	10733247	45	77165	04	56078	59	3671	30
40	35800583	+	10720602	43	62665	03	57937	59	1935	20
50	05110	+	10707958	42	48162	01	59796	60	0199	10
59°	09637	+	10695316	40	33661	00	61655	60	8463	0
10	14163	+	10682676	38	19161	00	63515	60	6727	50
20	18690	+	10670038	37	04664	00	65374	61	4991	40
30	23216	+	10657401	35	95750167	00	67234	61	3254	30
40	27743	+	10644766	33	75671	94	69095	92	1517	20
50	32265	+	10632133	31	61177	92	70956	92	9780	10
60	36795	+	10619502	31	46685	92	72817	92	8043	0

Grad. 69.

S. M.

Grad. 2 r.

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M. S.	Sinns.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinns.	D.		
0	0	35836795	4526	101	619503	1267	95746685	90	6872817	61	8043	60
	10	41321			606873		32195		74678	62	6305	50
	20	45847			594246		17706	1486	76540	63	4567	40
	30	50373			581621	25	03220		78401	61	2829	30
	40	54899			568997	24	95688734	84	80263	62	1091	20
	50	59425	25		556375	22	74250	83	82123	63	5353	10
1	0	63950	26		543755	20	59767	80	83988	63	7614	39
	10	68476	25		531137	18	45287	80	85850	62	5875	50
	20	73001	26		518521	16	30808	79	87713	63	4136	40
	30	77527	25		505907	14	16331	77	89576		2397	30
	40	82052			493295	12	01855	76	91440	64	0658	20
	50	86577			480684	11	95587380	75	93304	65	8918	10
						09	72906	74	95169	65	7178	
1	0	91102			468075	07	58435	71	97033	64	5438	058
	10	95627			455468	05	43965	70	98898	64	3697	50
	20	35900152			442863	03		68		65		40
	30	04677			430260	01	29497	66	6900763	66	1937	40
	40	09202			417659	00	15031		02628	66	0216	30
	50	13727			405059		00565	63	04494	66	8475	20
								62		65		10
3	0	18252	24		392461	1259	95486102	61	06359	65	6734	057
	10	22776	25		379865	4	71640	61	08225	66	4992	50
	20	27301	24		367271	92	57179	58	10092	66	3250	40
	30	31825			354679	91	42721		12958	67	1508	30
	40	36349	25		342088	89	28263	56	13825	67	9766	20
	50	40874	24		329499	87	13807	54	15692	68	8024	10
										67		
4	0	45398			316912	85	95399353	53	17559	68	6281	43
	10	49922			304327	83	84900	50	19427	67	4539	42
	20	54446			291744	81	70450	49	21294	68	2796	43
	30	58970	23		279163	80	56001	47	23162	69	1052	44
	40	63493	24		266583	78	41552	45	25031	69	9309	43
	50	68017			254005	76	27105	42	26900	70	7565	44
										69		
5	0	72541	23		241429	74	12660	41	28769	70	5821	055
	10	77064	24		228855	72	95298217	43	30638	70	4077	50
	20	81588	23		216283	70	83775	39	32508	69	3333	40
	30	86111			203713	69	69336	37	34377	70	0588	45
	40	90634	24		191144	67	54897	36	36247	71	8844	44
	50	95158	23		178577	65	40460	36	38127	71	7099	45
	60	99681			166012		26024		39988		5353	46

Grad. 68.

S.M

Grad. 21.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6	0	35999681	166013	1	95226014	1	6939988	71	5353	60
10	36004304	153449	153449	1	11590	1	41859	71	3608	50
20	08727	140888	140888	1	95197158	1	43730	72	1863	40
30	13350	128328	128328	1	82726	1	45602	72	0116	30
40	17772	115770	115770	1	68297	1	47473	71	3370	20
50	22295	103214	103214	1	53869	1	49345	72	6624	10
60	26818	090660	090660	1	39443	1	51217	73	4878	47
70	31340	078108	078108	1	25018	1	53090	72	3131	50
80	35863	065558	065558	1	10596	1	54962	73	1384	40
90	40385	053009	053009	1	95096174	1	56835	73	9637	30
100	44907	040461	040461	1	81754	1	58708	72	7889	20
110	49430	027916	027916	1	67334	1	60582	73	6142	10
120	53952	015372	015372	1	52916	1	62456	74	4394	0
130	58474	002830	002830	1	38500	1	64330	75	2646	50
140	62996	990290	990290	1	24085	1	66205	76	0898	40
150	67518	977752	977752	1	09673	1	68079	77	9149	30
160	72039	965216	965216	1	94995262	1	69954	78	7400	20
170	76561	952682	952682	1	80853	1	71825	79	5651	10
180	81083	940150	940150	1	66446	1	73704	80	3902	0
190	85604	927620	927620	1	52040	1	75580	81	2153	50
200	90126	915092	915092	1	37637	1	77455	82	0403	40
210	94647	902565	902565	1	23234	1	79331	83	8654	30
220	99168	890040	890040	1	08832	1	81208	84	6904	20
230	36103689	877516	877516	1	94894431	1	83085	85	5153	10
240	08210	864993	864993	1	80031	1	84962	86	3403	0
250	12731	852472	852472	1	65632	1	86840	87	1652	50
260	17252	839953	839953	1	51236	1	88717	88	9901	40
270	21773	827437	827437	1	36842	1	90595	89	8150	30
280	26294	814923	814923	1	22450	1	92473	90	6399	20
290	30815	802411	802411	1	08060	1	94352	91	4647	10
300	35335	789901	789901	1	94793671	1	96230	92	2899	0
310	39856	777393	777393	1	79284	1	98109	93	1143	50
320	44376	764886	764886	1	64897	1	99989	94	9391	40
330	48897	752380	752380	1	50512	1	700168	95	7634	30
340	53417	739876	739876	1	36128	1	03748	96	5886	20
350	57937	727373	727373	1	21745	1	05628	97	4133	10
360	62457	714872	714872	1	07364	1	07508	98	2380	0

Grad. 68.

S.M.

Grad. 21.

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M.S.	Sin.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sin.	D.
12 0	36162457	19	0.714872	9	94707384	80	7007508	81	2380	60
10	66977	19	0.703173	9	94692984	79	09389	80	0617	53
10	71497	19	0.689876	9	78607	78	11269	81	8873	54
30	76017	19	0.677181	93	64231	77	13150	81	7110	51
40	80536	19	0.664888	91	49856	76	15032	82	5366	54
50	85056	19	0.652397	88	35483	75	16914	82	3651	55
13 0	89576	19	0.639909	86	21113	70	18796	83	1857	54
10	94095	19	0.627423	85	06744	69	20679	83	0102	50
20	98615	19	0.614938	84	94592377	67	22561	83	8347	40
30	36103134	19	0.602454	82	78010	65	24444	83	6591	30
40	07653	19	0.589972	81	63645	64	26327	84	4837	20
50	12172	19	0.577492	80	49281	63	28210	84	3082	10
14 0	16691	18	0.565011	77	34917	61	30094	85	1326	046
10	21210	18	0.552534	76	20556	59	31978	85	9570	50
20	25729	18	0.540058	74	06195	58	33863	85	7814	40
30	30248	18	0.527584	72	94491837	57	35747	85	6057	30
40	34767	18	0.515112	69	77480	56	37632	85	4301	20
50	39285	18	0.502643	68	63126	54	39517	85	2544	10
15 0	43804	18	0.490175	66	48773	53	41402	86	0787	045
10	48322	18	0.477705	64	34421	52	43288	86	9030	50
20	52841	18	0.465245	63	20072	49	45173	86	7272	40
30	57359	18	0.452782	61	05923	47	47059	86	5514	30
40	61877	18	0.440321	59	94391376	46	48945	87	3756	20
50	66395	18	0.427861	57	77030	44	50832	87	1998	10
16 0	70913	17	0.415405	55	62686	43	52719	87	0240	044
10	75431	17	0.402950	53	48344	42	54606	88	8481	50
20	79945	17	0.390497	52	34003	41	56494	88	6723	40
30	84462	17	0.378045	50	19664	39	58381	87	4964	30
40	88985	17	0.365595	49	05326	38	60269	88	3204	20
50	93502	17	0.353146	47	94290989	37	62157	89	1449	10
17 0	98020	17	0.340699	45	76653	36	64046	89	9685	043
10	36302537	17	0.328254	43	62326	35	65934	88	7925	50
20	07055	17	0.315821	41	47988	34	67823	89	6165	40
30	11572	17	0.303370	39	33658	30	69712	90	4405	30
40	16089	17	0.290931	37	19329	29	71602	90	2645	20
50	20606	17	0.278494	35	05002	27	73492	91	0884	10
60	25123	17	0.266059	33	94190677	25	75382	91	69123	042

Grad. 68.

S.M.

Grad. 21.

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M. S.	Sinus.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus.	D.
18 0	36325123	4517	166059	113	94190677	14	7075382	91	91123	60
10	19640		1533620	2	76353	2	77273	91	7362	61
20	34157		241194	0	6203	1	79163	90	5600	62
30	38674	16	228764	19	47710	1	81054	1891	3839	61
40	43190	16	216335	27	33390	20	82945	18	2077	62
50	47707	17	203908	26	19072	18	84836	92	0315	10
19 0	52223	16	191482	24	04754	16	86728	93	8552	63
10	56740	17	179058	21	94090438	15	88620	93	6790	61
20	61256	16	166636	20	76123	12	90513	92	5027	40
30	65772		154116	18	61811	11	92405	93	3264	30
40	70288		141798	16	47500	09	94298	93	1501	20
50	74804		129382	13	33191	06	96191	94	9738	10
20 0	79320		116969	11	18885	03	98084	94	7974	64
10	83836		104557	10	04575	02	99978	93	6210	40
20	88352		092147	09	93990276	01	7101871	94	4446	30
30	92868		079738	07	75973	00	03765	95	2682	20
40	97384	15	067331	06	61671	1429	05660	96	0917	10
50	36401899	16	054925	05	47370	8	07555	913	9153	65
21 0	06415	15	043520	03	33070	7	09450	96	7388	66
10	10930		030117	01	18772	4	11345	95	5622	50
20	15445	16	017716	9	04475	92	13241	96	3857	40
30	19961	15	005317	4	93890181	90	15136	97	2092	30
40	24476	100	992921	88	75889	86	17032	96	0326	20
50	28991		980527	87	61599	89	18928	97	8560	10
22 0	33506		968135	90	47310	84	20825	97	6794	67
10	38021	14	955745	89	33024	83	22721	96	5027	50
20	42535	15	943356	88	18738	82	24618	97	3260	40
30	47050		930968	86	04453	81	26515	98	1493	30
40	51565	14	918582	85	93790169	84	28413	98	9726	20
50	56079	15	906197	83	75886	83	30311	99	7959	10
23 0	60594	14	893814	81	61604	82	32210	99	6191	68
10	65108		881433	79	47325	79	34108	98	4424	67
20	69622		869054	77	33047	78	36007	99	2656	68
30	74136		856677	75	18771	76	37906		0888	30
40	78650		844302	74	04497	74	39805	910	9119	69
50	83164		831928	72	93690233	71	41705	910	7351	68
60	87678		819556		75951		43605	1900	5582	69

Grad. 68.

J. M.

Grad. 21.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
24 0	36487678	11	819556	70	93675951	70	7143605	00	93105582	69 60
10	92192	11	807186	70	61681	70	45505	01	03813	70 50
20	96706	11	794817	1360	47611	1467	47406	00	01043	69 40
30	36501220	13	782650	63	33144	63	49306	01	00174	30
40	05733	14	770085	61	18878	61	51207	01	93098504	20
50	10247	13	757722	59	04614	59	53108	02	96734	10
25 0	14760	13	745361	57	93590351	57	55010	02	94964	71 035
10	19274	14	733002	55	76090	55	56912	03	93193	70 50
20	23787	13	720644	53	61829	53	58815	02	91423	71 40
30	28300	13	708287	51	47570	51	60717	1901	89652	30
40	32813	12	695931	49	33312	49	62620	01	87881	20
50	37326	12	683579	47	29056	47	64523	03	86110	10
26 0	41839	12	671228	45	04802	45	66426	04	84338	71 034
10	46352	13	658875	43	93490351	43	68328	02	82566	50
20	50864	12	646532	41	76301	41	70231	03	80794	40
30	55377	12	634187	40	62052	40	72135	04	79022	30
40	59890	12	621844	38	47805	38	74039	05	77250	20
50	64402	13	609503	37	33560	37	75943	06	75477	10
27 0	68914	12	597163	35	19315	35	77848	05	73705	73 033
10	73427	12	584825	33	05072	33	79753	06	71932	73 50
20	77939	12	572488	31	93390829	31	81659	05	70158	74 40
30	82451	12	560153	30	76589	30	83564	06	68385	73 30
40	86963	11	547820	28	62350	28	85470	06	66611	74 20
50	91475	11	535489	26	48113	26	87376	07	64837	10
28 0	95987	11	523159	24	33877	24	89282	07	63063	032
10	36600499	11	510831	22	29642	22	91189	08	61289	50
20	05010	12	498505	20	05409	20	93096	07	59514	75 40
30	09522	11	486181	19	93291178	19	95003	08	57740	74 30
40	14034	11	473859	17	76948	17	96911	07	55965	75 20
50	18545	12	461538	16	62720	16	98818	08	54189	76 10
29 0	23056	11	449219	14	48493	14	7200726	08	52414	75 031
10	27568	11	436902	13	34267	13	02635	09	50638	76 50
20	32079	11	424586	12	20043	12	04543	08	48862	40
30	36590	11	412272	11	05820	11	06452	09	47086	30
40	41101	10	399960	10	93191599	10	08361	10	45310	20
50	45612	10	387650	09	77380	09	10270	10	43534	10
60	50123	10	375341	09	63161	09	12180	10	41757	77 030

Grad. 68.

Ee

S.M.

Grad. 21.

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M. S.	Sinus.	D.	Logarith. D.	Different. D.	Logarith. D.	Sinus.	D.
30 °	36650123	10	375341	93163161	7211180	93041757	60
10	54633	11	363034	48945	14089	39980	77
20	59144		350729	34730	15999	38203	78
30	63655		338426	20517	17909	36425	79
40	68165	10	326124	06304	19820	34648	80
50	72676	11	313824	93092093	21731	32870	81
31 °	77186	4510	301526	77883	23643	31092	82
10	81696		289230	63676	25554	29314	83
20	86206		276936	49470	27466	27535	84
30	90716		264643	35265	29378	25756	85
40	95226		252352	21062	31290	23977	86
50	99736		240062	06859	33203	22198	87
32 °	36704246		227774	92992658	35116	20414	88
10	08756		215488	78459	37029	18631	89
20	13265	09	203204	64261	38943	16855	90
30	17775	10	190922	50066	40856	15079	91
40	22284	09	178641	35871	42770	13295	92
50	26294	10	166362	21678	44684	11515	93
33 °	31303	09	154085	07486	46599	09738	94
10	35812		141810	92893297	48513	07957	95
20	40321		129536	79108	50428	06176	96
30	44830		117264	64921	52343	04395	97
40	49339		104994	50735	54259	02613	98
50	53848		092726	36551	56175	00831	99
34 °	58357		080459	22368	58091	92999049	026
10	62866		068194	08186	60008	97267	03
20	67374	08	055931	92794007	61924	95485	04
30	71883	09	043670	79825	63841	93702	05
40	76391	08	031411	65653	65758	91919	06
50	80899		019153	51478	67675	90136	07
35 °	85408	05	006897	37304	69593	88353	08
10	89916	08	99994642	23131	71511	86569	09
20	94424		982385	08959	73430	84786	10
30	98932		970138	92694790	75348	83002	11
40	36803430		957888	80621	77267	81218	12
50	07948	07	945640	66454	79186	79433	13
60	12455		933394	52188	81106	77649	14

Grad. 68.

S. A.

Grad. 21.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
36 0	36812455	08	99933394	1224	92652288	14164	7281106	1910	92977649	60
10	16963	07	21150	1224	38134	14164	83026	1910	75864	85
20	21470	08	08907	1224	23961	14164	84946	1910	74079	40
30	25978	07	99896666	39	09800	60	86866	21	72293	30
40	30485	07	84427	37	92595640	57	88787	20	70508	20
50	34992	08	72190	36	81483	57	90707	21	68722	10
37 0	39500	4507	59954	34	67326	56	92628	21	66936	023
10	44007	07	47720	34	53170	53	94550	22	65150	50
20	48514	07	35488	30	39017	53	96471	21	63364	40
30	53021	06	23258	28	24865	50	98393	22	61577	30
40	57528	06	11030	27	10715	49	7300315	23	59790	20
50	62035	06	99798803	25	91496566	48	02237	23	58003	10
38 0	66541	07	86578	23	82418	46	04160	24	56216	022
10	71048	06	74355	22	68272	43	06083	24	54429	50
20	75554	07	62133	20	54126	43	08007	23	52641	40
30	80061	06	49913	18	39983	42	09930	24	50853	30
40	84567	07	37695	16	25841	40	11854	25	49065	20
50	89073	07	25479	15	11701	39	13778	24	47277	10
39 0	93580	06	13264	13	92397562	38	15702	25	45488	021
10	98086	06	01051	11	83424	35	17627	24	43700	50
20	36902592	05	99688840	09	69289	34	19551	25	41911	40
30	07098	05	76631	08	55155	33	21476	26	40121	30
40	11603	05	64423	06	41022	32	23401	27	38332	20
50	16109	05	52217	04	26890	30	25327	26	36542	10
40 0	20615	05	40013	03	12760	29	27253	27	34752	020
10	25120	06	27810	01	92298631	28	29179	27	32962	50
20	29626	05	15609	11	84503	25	31106	26	31172	40
30	34131	06	03410	11	70378	24	33032	27	29382	30
40	38636	06	99591213	09	56254	23	34959	27	27591	20
50	43142	05	79017	94	42131	22	36886	28	25800	10
41 0	47647	05	66823	92	28009	19	38814	28	24009	019
10	52152	04	54631	92	13890	17	40741	27	22217	50
20	56657	05	42440	91	92199771	17	42669	28	20426	40
30	61162	04	30251	89	85654	16	44597	29	18634	30
40	65666	05	18064	87	71538	15	46526	30	16842	20
50	70171	05	05878	86	57423	14	48455	30	15050	10
60	74676	05	99493694	84	43309	14	50385	30	13257	018

Grad. 68.

S.M

Ec 2

Grad. 21.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 °	36974676	04	99493694	81	92143309	11	7350385	29	92913257	60
10	79180	05	81512	80	29198	10	52314	29	11464	50
20	83685	05	69332	79	15088	10	54244	29	69671	40
30	88189	05	57153	78	00979	10	56174	29	07878	30
40	92693	05	44976	77	92086872	10	58104	29	06085	20
50	97197	05	32801	76	72766	04	60035	31	04292	10
43 °	37001702	04	20628	73	58662	02	61966	32	02498	94
10	06206	03	08457	71	44560	02	63897	32	00704	017
20	10709	04	99396287	68	30458	1400	65829	32	91898900	40
30	15213	04	84119	65	16359	1400	67760	31	97215	95
40	19717	03	71953	66	02261	1400	69692	32	95320	30
50	24221	03	59788	64	91888164	1400	71624	33	93525	20
44 °	28724	04	47624	62	74067	95	73557	33	91730	10
10	33228	03	35462	60	59972	93	75490	34	89935	016
20	37731	03	23302	58	45879	91	77423	34	88140	40
30	42234	04	11144	56	31788	90	79356	34	86344	96
40	46738	03	99298988	55	17698	88	81290	33	84548	30
50	51241	03	86833	53	03610	87	83223	34	82752	20
45 °	55744	02	74680	51	91889523	86	85157	35	80955	10
10	60247	02	62529	49	75437	86	87092	35	79159	015
20	64750	02	50380	48	61354	83	89026	34	77362	50
30	69252	03	38232	46	47271	81	90961	35	75565	40
40	73755	03	26086	44	33190	79	92896	36	73767	30
50	78258	02	13942	42	19111	78	94831	36	71970	20
46 °	82760	03	01800	40	05033	76	96767	37	70172	10
10	87263	02	99189660	38	91790957	76	98703	37	68374	014
20	91765	02	77522	37	76882	75	7400640	36	66576	50
30	96267	03	65385	36	62805	73	02574	36	64778	40
40	37100769	01	53249	35	48736	72	04513	37	62975	30
50	05271	02	41114	33	34664	70	06450	37	61180	20
47 °	09773	01	28981	31	20594	69	08387	38	59381	10
10	14275	01	16850	29	06525	67	10325	38	57582	013
20	18777	01	04721	27	91692458	65	12263	39	55783	50
30	23279	01	99192594	25	78393	64	14201	39	53983	40
40	27781	01	80469	24	64325	62	16140	39	52183	30
50	32282	02	68345	22	50267	61	18078	38	50383	20
60	36784	02	56223	21	36206	61	20017	39	48583	10

Grad. 68.

S. M.

Grad. 21.

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M. S.	Sinus.	D.	Logarithm.	D.	Different.	D.	Logarithm.	D.	Sinus.	D.
48°	37136784	4501	99056123	10	91636206	60	7410017	46	92848583	60
10	41285		44103	10	22146	60	21957	46	46782	50
20	45786		31985	12118	08089	14057	23856	39	44981	40
30	50287	02	19868	118	91594032	14057	25836	1940	43180	30
40	54789	01	07753	14	79977	54	27776	40	41379	20
50	59280	01	98995639	12	65913	53	29716	41	39578	10
49°	63791	00	83527	10	51870	50	31657	41	37776	011
10	68291	01	71417	08	37820	49	33597	40	35974	50
20	72792	01	59309	07	23771	48	35538	41	34172	40
30	77293	00	47202	03	09723	47	37479	42	32360	30
40	81793	01	35097	02	91495676	45	39421	43	30567	20
50	86294	00	22994	01	81631	44	41363	43	28765	10
50°	90794	01	10891	00	67586	41	43306	42	26962	010
10	95295	00	98898791	12098	53544	41	45248	43	25159	50
20	99795	00	86694	1098	39503	40	47195	43	23355	40
30	37204195		74597	93	25463	38	49134	44	21552	30
40	08795		62502	91	11425	37	51077	43	19748	20
50	13295		50409	89	91397388	36	53021	44	17944	10
51°	17795		38318	88	83554	34	54964	43	16139	09
10	22295		26239	87	69321	33	56908	44	14335	50
20	26795		14141	85	55288	31	58853	45	12530	40
30	31295	4409	02054	83	41257	30	60797	44	10725	30
40	35794		98789969	81	27227	28	62742	45	08920	20
50	40293		77886	80	13199	26	64687	46	07115	10
52°	44793		65804	78	91299171	24	66633	47	05309	08
10	49293		93724	76	85145	22	68579	48	03503	50
20	53791		41646	74	71121	20	70525	49	01697	40
30	58290		29570	73	57099	19	72471	48	92799891	30
40	62789		17496	71	43078	18	74418	47	98085	20
50	67288		05423	69	29058	16	76365	48	96278	10
53°	71787	98	98693352	68	15039	14	78313	49	94471	07
10	76286	99	81283	66	01023	12	80260	48	92664	50
20	80784	98	69215	64	91187007	11	82108	47	90857	40
30	85283	98	57149	62	72993	10	84156	49	89049	30
40	89782		45085	60	58981	08	86105	48	87142	20
50	94270		33023	58	44920	07	88053	47	85434	10
60	98778		20963	56	30962	06	90001	46	83625	06

Grad. 68.

S.M.

Grad. 21.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54° 0'	37298778	98	98620963	1	91130962	1400	7490001	49	92783625	08
10	37303276	99	08904	2	16954	1400	91950	50	81817	50
20	07775	98	98596847	3	02947	1400	93900	49	80008	40
30	12273	86	84791	54	91088942	04	95849	49	78199	30
40	16771	86	72737	53	74938	03	97799	50	76390	20
50	21269	97	60684	52	60935	02	99749	50	74581	10
55° 0'	25766	98	48632	50	46933	01	7501699	51	72772	05
10	30264	97	36582	48	32932	1000	03650	51	70962	50
20	34762	97	24534	46	18933	1000	05601	51	69152	40
30	39259	98	12488	44	04936	1000	07553	51	67342	30
40	43757	97	00444	42	90990940	93	09504	51	65532	20
50	48254	97	98488402	40	76947	92	11455	52	63721	10
56° 0'	52751	96	76362	39	62955	89	13407	52	61910	04
10	57248	96	64323	37	48963	89	15360	53	60099	50
20	61745	96	52286	36	34974	87	17312	53	58288	40
30	66242	96	40250	34	20985	85	19265	53	56476	30
40	70739	96	28216	32	06998	84	21218	54	54665	20
50	75236	96	16184	30	90893013	82	23171	54	52853	10
57° 0'	79733	96	04154	29	79029	81	25125	54	51041	03
10	84230	97	98392125	27	65047	81	27078	55	49228	50
20	88726	97	80098	26	51066	80	29032	54	47416	40
30	93223	96	68072	24	37086	79	30986	55	45603	30
40	97719	96	56048	22	23107	77	32941	55	43790	20
50	37402215	97	44026	20	09130	76	34896	56	41977	10
58° 0'	06712	96	32006	19	90795154	74	36852	55	40162	02
10	11208	96	19987	17	81180	73	38807	56	38350	50
20	15704	96	07970	15	67207	71	40763	56	36536	40
30	20200	95	98295955	13	53236	69	42719	57	34722	30
40	24696	95	83942	12	39267	67	44675	57	32908	20
50	29191	96	71930	10	25298	67	46632	57	31093	10
59° 0'	33687	96	59920	08	11331	65	48589	58	29278	01
10	38183	95	47912	07	90697366	64	50546	58	27463	50
20	42678	96	35905	05	83401	62	52504	57	25648	40
30	47174	95	23900	04	69439	61	54461	57	23833	30
40	51669	95	11896	03	55477	60	56419	58	22017	20
50	56164	95	98199894	01	41517	59	58377	59	20201	10
60	60659	95	87893	00	27557	58	60336	59	18385	00

Grad. 22.

S.M.

Grad. 22.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0 0	37460659		98187893		90627557		7560336		92718385	60
10	65154	495	75894	100	13600	1391	62294	58	16569	50
20	69649		63897	50	90599644		64253	59	14753	40
30	74144		51902		85690		66212	60	12936	30
40	78639		39908	94	71736	54	68172	52	11119	20
50	83134		27916	92	57784	51	70132	61	09302	10
1 0	87628	94	15926	90	43833	48	72093	60	07485	059
10	92123	95	03938	88	29885	48	74053	60	05667	50
20	96617	94	98091951	87	15937	46	76014	1961	03849	40
30	37501112	95	79966	85	01991	44	77975	62	02031	30
40	05606	94	67983	83	90488047	44	79936	62	00213	20
50	10100		56001	82	74103	43	81898	92698395	91698395	10
2 0	14594		44020	81	60160	42	83860	63	96576	058
10	19088		31041	79	46218	40	85823	62	94757	50
20	23582		20063	78	32278	39	87785	63	92938	40
30	28076		08087	76	18339	37	89748		91119	30
40	32560		97996113	74	04402	37	91711		89299	20
50	37064		84141	72	90390467	35	91674		87470	10
3 0	41557	93	72171	70	76533	34	95638	64	85650	057
10	46051	94	60202	69	62601	32	97601	63	83839	50
20	50544	93	48235	67	48670	31	99565	64	82019	40
30	55037		36270	65	34741	29	7601529	65	80198	30
40	59531	94	24307	63	20813	28	03494		78378	20
50	64024	93	12345	62	06886	27	05459		76557	10
4 0	68517		00385	60	90292960	26	07425	66	74735	056
10	73000		97888426	59	79036	24	09390	65	72914	50
20	77503		76469	57	65113	23	11356	66	71092	40
30	81995	92	64513	56	51191	22	13322		69270	30
40	86488	93	52559	54	37270	21	15289	67	67448	20
50	90981		40607	52	23351	19	17256		65626	10
5 0	95473	92	28657	50	09434	17	19223		63803	055
10	99966	93	16709	48	90195510	15	21190	68	61980	50
20	37604458	92	04762	47	81604	14	23158	68	6015	40
30	08950		97792817	45	67692	12	25125	67	58334	30
40	13442		80873	44	53780	11	27093	68	56511	20
50	17934		68931	42	29870	10	29062		4468	10
60	22426		56990	41	25960		31030	69	5286	054

Grad. 67.

J. S. M.

Grad. 22.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
6	37622426		97756990		90125969		7631030		92652863		60
10	26918		45051		12053		32998		51039		50
20	31410		33114		90098147		34967		49215		40
30	35902		21179		84243		36936		47390		30
40	40393		09246		70340		38906		45565		20
50	44885		97697314		56438		40876		43740		10
60	49376		85383		42536		42847		41915		053
70	53868		73454		28637		44817		40090		50
80	58359		61526		14738		46788		38264		40
90	62850		49600		00841		48759		36438		30
100	67341		37676		89986945		50731		34612		20
110	71832		25754		73051		52703		32786		10
120	76323		13834		59159		54675		30960		053
130	80814		01915		45268		56647		29133		50
140	85305		97589997		31377		58620		27306		40
150	89795		78081		17489		60592		25479		30
160	94286		66167		03602		62565		23651		20
170	98776		54255		89889717		64538		21824		10
180	37703267		42345		75833		66512		19996		053
190	27757		30436		61951		68485		18168		50
200	12247		18528		48069		70459		16340		40
210	16737		06622		34189		72433		14511		30
220	21227		97494718		20310		74408		12683		20
230	25717		82816		06433		76383		10854		10
240	30207		70916		89792557		78359		09025		050
250	34697		59017		78683		80334		07195		50
260	39186		47120		64810		82310		05366		40
270	43676		35224		50938		84286		03536		30
280	48166		23330		37068		86262		01706		20
290	52655		11438		23199		88239		2599876		10
300	57145		97199548		09333		90215		98046		049
310	61634		87659		89695467		92192		96215		50
320	66123		75772		81602		94170		94384		40
330	70612		63886		67739		96147		92553		30
340	75101		52002		53877		98125		90722		20
350	79590		40119		40016		7700103		88890		10
360	84079		28238		26157		02081		87058		048

Grad. 67.

S.M.

Grad. 22.

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M.S.	Sinus.	D.	Logarith.	D.	Differens.	D.	Logarith.	D.	Sinus.	D.
12 0	37784079	88	97328238	80	89626157	59	7702081	1079	82587958	60
10	88567	89	16358	80	12398	57	04060		85226	50
20	93056	88	04480	80	89598441	57	06037		83394	40
30	97544	88	97292604	71	84586	55	08018	80	81562	30
40	37802033	89	80730	73	70732	54	09998	80	79729	33
50	06521	88	68857	71	56880	52	11977	79	77897	32
13 0	11010	89	56986	69	43029	51	13957	81	76064	33
10	15498	88	45117	68	29179	50	15938	80	74230	34
20	19986	88	33249	66	15331	48	17918	81	72397	33
30	24474	87	21383	64	01484	47	19899	81	70563	34
40	28962	88	09515	64	89487639	45	21880	80	68729	30
50	33450	87	97197656	61	3795	44	23861	81	66895	20
14 0	37937	88	85795	61	59952	43	25843	81	65061	10
10	42425	87	73935	60	46110	42	27825	83	63226	35
20	46912	88	62077	58	32269	41	29808	82	61391	40
30	51390	87	50211	56	18431	38	31790	82	59556	30
40	55887	88	38367	54	04594	37	33773	83	57721	20
50	60374	88	16514	53	89390758	36	35756	83	55886	10
15 0	64862	87	14663	51	76924	35	37739	84	54050	36
10	69349	87	02813	50	63090	34	39721	84	52214	30
20	73836	86	97090965	48	49258	33	41707	85	50378	40
30	78323	87	79218	47	35427	31	43691	85	48542	30
40	82810	86	67273	45	21597	30	45676	85	46706	20
50	87296	86	55430	43	07770	27	47660	84	44869	10
16 0	91783	87	43589	41	89293944	26	49645	85	43032	30
10	96270	86	31749	40	80119	25	51630	86	41195	40
20	37900756	86	19911	38	66295	24	53616	86	39358	30
30	05242	87	08074	37	52473	22	55601	85	37520	38
40	09720	86	96996239	35	38652	21	57587	86	35682	30
50	14215	86	84406	33	24833	19	59573	87	33844	20
17 0	18701	87	72575	31	11045	18	61560	87	32006	10
10	23187	86	60745	30	89197198	17	63547	88	30167	39
20	27673	85	48917	28	83383	15	65534	88	28329	38
30	32159	86	37090	27	69569	14	67521	89	26490	39
40	36645	85	25265	25	55756	13	69519	88	24651	30
50	41230	86	13441	24	41944	12	71497	89	22811	40
60	45616	86	01619	22	28133	11	73486	89	20972	35

Grad. 67.

S.M.

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Grad. 22.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	57945616	85	96901619	10	89128133	1307	7773485	88	92520972	60
10	50101	85	96889799	10	14126	1307	75473	88	19131	50
20	54587	86	77980	11810	00518	1307	77462	1989	17292	40
30	59072	4485	66163	89086712	79451	1989	79451	15452	15452	30
40	63557	4485	94348	72908	81440	03	81440	13611	13611	20
50	68042	4485	42535	59105	83430	02	83430	11771	11771	10
19 0	72527	84	30723	45303	85420	01	85420	09930	09930	041
10	77012	85	18912	31502	87410	00	87410	08089	08089	50
20	81497	84	07102	17702	89401	797	89401	06248	06248	40
30	85982	84	96795296	03905	91391	1797	91391	04406	04406	30
40	90467	85	83491	88990105	93382	797	93382	02564	02564	20
50	94952	84	71688	76315	95373	8	95373	00722	00722	10
20 0	99436	85	59886	62521	97365	87	97365	92498880	92498880	040
10	8003920	85	48086	48730	99356	91	99356	97038	97038	50
20	08405	84	36287	34935	7801348	87	7801348	95195	95195	40
30	12889	84	24490	21150	03340	87	03340	93353	93353	30
40	17373	85	12694	07361	05333	8	05333	91510	91510	20
50	21857	84	00900	88893574	07321	8	07321	89666	89666	10
21 0	26341	83	96689107	79787	09320	84	09320	87823	87823	039
10	30825	84	77316	66003	11313	84	11313	85975	85975	50
20	35309	83	65526	52215	13307	82	13307	84135	84135	40
30	39793	84	53738	38437	15301	80	15301	82291	82291	30
40	44276	83	41952	24657	17295	79	17295	80447	80447	20
50	48760	83	30162	10878	19290	77	19290	78602	78602	10
22 0	53243	84	18386	8797101	21285	76	21285	76750	76750	038
10	57726	83	06605	83325	23280	75	23280	74912	74912	50
20	62210	83	96394826	69550	25276	73	25276	73067	73067	40
30	66693	83	83048	55777	27271	72	27271	71222	71222	30
40	71170	82	71272	42005	29267	71	29267	69376	69376	20
50	75659	82	59497	28234	31263	70	31263	67530	67530	10
23 0	80142	81	47723	14463	33260	68	33260	65684	65684	037
10	84625	81	35951	00695	35256	67	35256	63838	63838	50
20	89108	82	24181	88686928	37253	65	37253	61992	61992	40
30	93590	83	12413	73163	39250	64	39250	60145	60145	30
40	98073	82	00647	59359	41248	62	41248	58298	58298	20
50	38102553	83	96488883	45637	43246	61	43246	56450	56450	10
60	07038	83	77120	31876	45244	61	45244	54603	54603	036

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S.M.

Grad. 22.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
24 0	38107038		96477120	61	88631976	60	7845244	99	92454603	60
10	11510		65359	61	18116		47143	99	52756	47
20	16001		53599	60	04358		49241	98	50908	40
30	20484		41841	1758	88590601		51240	1099	49050	30
40	24966		30084		76845	54	53239		47212	20
50	29448		18329		63091	54	55238		45363	10
25 0	33930		05575	54	49337	52	57236	1000	43515	035
10	38412	81	96394823	52	35585	51	59238	01	41666	50
20	42893	82	83073	50	21834	49	61239	00	39217	40
30	47375	81	71324	49	08085	45	63239	00	37967	30
40	51856	82	59577	47	88494337	48	65240	01	36118	20
50	56338	81	47831	46	80590	46	67241	02	34268	10
26 0	60819		36087	44	66844	45	69243		32418	034
10	65300		24144	43	53099	43	71245		30568	50
20	69781		12603	4	39356	41	73247		28717	40
30	74262		00864	39	25615	40	75249	03	26867	30
40	78743		96189127	37	11875	37	77252	02	25016	20
50	83224		77392	35	88398238	37	79254	01	23165	10
27 0	87705		65658	34	84401	36	81257	03	21314	033
10	92186	30	53926	31	70665	34	83261	04	19462	50
20	96666	81	42195	29	56931	33	85264	03	17610	40
30	38201147	80	30466	28	43198	32	87268	04	15758	30
40	05627		18738	26	29466	30	89272		13906	20
50	10107	81	07012	25	15736	25	91276		12054	10
28 0	14588		96195227	23	02006	28	93281	05	10201	032
10	19068	80	83564	21	88288278	28	95286	06	08348	50
20	23548		71842	20	74550	25	97292		06495	40
30	28028		60122	18	60825	24	99297	05	04642	30
40	32508	75	48424	16	47101	22	7901303	06	02789	20
50	36987	80	36688	14	33379	20	03309		00935	10
29 0	41467		24974	13	19659		05315		92399081	031
10	45947	79	13261	12	05939	19	07322	07	97227	50
20	50426	80	01549	10	88191220	17	09329		95373	40
30	54906	79	96089839	09	72503		11336		93518	55
40	59385		78130	07	64786	14	13344	08	91663	30
50	63864		66423	05	51072	13	15351	07	89808	20
60	68343		54718		37359		17359	08	87953	10

Grad. 67.

15. M.

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Grad. 22.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinu.	D.
30	38268343	+	96054718	1170301	88137359	13712	7917359	09	92387953	60
10	72822	+	43015	1170301	23647	08	19368	08	86098	50
10	77301	9	31313	11699	09937	06	21376	10	84142	40
30	81780	78	19612	11699	88096217	08	23385	1009	82386	30
40	86259	79	07913	11699	82519	06	25394	10	80530	20
50	90738	78	95996216	11699	68813	06	27403	10	78674	10
31	95216	78	84520	94	55107	04	29413	11	76818	57
10	99695	79	72826	93	41403	01	31423	11	74961	50
20	38304173	78	61133	91	27699	00	33434	10	73104	40
30	08651	79	49442	89	13998	1698	35444	11	71247	30
40	13120	78	37753	87	00298	96	37455	11	69384	20
50	17608	78	26066	86	87986600	95	39466	11	67532	10
32	22086	77	14380	84	72903	94	41477	12	65674	028
10	26564	77	02696	83	59207	93	43489	12	63816	50
20	31042	78	95891013	82	45512	90	45501	13	61958	40
30	35510	77	79331	80	31818	89	47513	13	60095	30
40	39997	78	67651	78	18125	88	49526	14	58241	20
50	44475	77	55973	76	04435	85	51538	15	5638	10
33	48952	77	44297	75	87890746	84	53551	15	54523	027
10	53420	78	32622	74	77058	82	55564	16	52663	50
20	57907	77	20948	72	63370	81	57578	17	50804	40
30	62384	78	09274	70	49685	80	59591	17	48944	30
40	66862	77	95797606	68	36001	77	61605	18	47084	20
50	71339	76	85938	66	22315	76	63615	19	45224	10
34	75816	76	74272	65	08638	75	65634	19	43363	026
10	80292	77	62607	64	87794958	74	67645	20	41503	50
20	84769	76	50943	62	81278	73	69665	21	39642	40
30	89246	76	39251	60	67601	72	71680	22	37781	30
40	93723	75	27621	59	53925	71	73696	23	35920	20
50	98199	74	15962	57	40250	70	75712	24	34058	10
35	38402676	77	04305	55	26577	69	77728	25	32197	025
10	07152	76	95692650	54	12905	68	79745	26	30335	50
20	11628	75	80996	53	87699334	67	81762	27	28472	40
30	16104	74	69343	51	85564	66	83779	28	26610	30
40	20580	73	57692	49	71895	65	85797	29	24748	20
50	25056	72	46043	48	58229	64	87814	30	22885	10
60	29532	71	34395	46	44563	63	89832	31	21022	024

Grad. 67.

S.M.

Grad. 22.

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M. S.	Sinus.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus.	D.
36 0	38429532	76	95634395	1	87644563	1	79898334	18	92311021	60
10	34008		22749		30899		91850	19	19158	50
20	38484	75	11104		17235		93869	18	17295	40
30	42959	76	95599401	41	03574	60	95887	19	15431	30
40	47455	75	87820	39	87589914	58	97806	20	13567	20
50	51910	76	76181	38	76256		99925	21	11703	10
37 0	56386	75	68543	37	62598	57	8001949	22	09839	023
10	60861	76	52906	37	48941	56	05965	21	07975	50
20	65336	75	41271	35	35285	54	05986	20	06110	40
30	69811	76	29637	34	21631	53	08006	21	04245	30
40	74286	75	18005	32	07978	51	10027	20	02380	20
50	78761	76	06375	30	87494327	50	12048	21	00514	10
38 0	83236	75	95494746	29	80677	49	14069	22	92298649	022
10	87711	76	83119	27	67028	49	16091	21	96783	50
20	92185	74	71454	25	53382	46	18112	21	94917	40
30	96650	75	59870	24	39716	44	20134	23	93051	30
40	38501134	74	48248	22	26092	44	22156	23	91184	20
50	05605	75	36627	21	12448	43	24179	24	89317	10
39 0	10083	74	25007	20	87398805	41	26202	25	87450	021
10	14557	75	13389	18	85164	41	28235	24	85583	50
20	19031	74	01773	16	71524	40	30245	23	83716	40
30	23505	75	5390139	14	57887	37	32272	23	81848	68
40	27975	74	78546	13	44250	35	34296	24	79981	67
50	32453	75	66935	11	30615	34	36320	25	78113	68
40 0	36927	73	55326	09	26981	31	38345	24	76244	68
10	41400	74	43719	07	03350	31	40369	25	74376	50
20	45874	73	31112	06	87289719	30	42394	26	72507	69
30	50347	74	20508	05	76089	29	44419	26	70638	30
40	54821	75	08905	03	62460	28	46445	27	68769	20
50	59294	73	95297303	02	48832	27	48471	27	66900	10
41 0	63767	74	85703	01	35205	24	50498	26	65031	019
10	68240	75	74105	11	21581	24	52524	27	63161	50
20	72713	73	62568	10	07957	21	54551	27	61291	40
30	77186	74	50913	09	87194335	21	56578	28	59421	30
40	81659	75	39319	94	80714	20	58605	28	57550	20
50	86132	73	27727	92	67094	19	60633	28	55680	10
60	90604	72	16136	91	53475	19	62661	29	53809	018

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J.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 0	38590604	73	95216136	-	87153475	17	8062661	18	92233809	60
10	95077	72	04547	-	39858	16	64689	19	51938	50
20	99549	73	95192960	-	26242	14	66718	18	50067	40
30	38604022	47	81374	84	12628	13	68746	19	48195	30
40	08494	47	69790	84	87099015	12	70775	19	46324	20
50	12966	47	58207	83	85403	11	72804	30	44452	10
43 0	17438	47	46625	82	71791	09	74834	29	42579	73
10	21910	47	35045	80	58182	08	76863	29	40707	72
20	26382	47	23467	78	44574	07	78893	30	38835	60
30	30854	47	11990	75	30967	06	80923	31	36962	50
40	35326	47	00315	73	17361	04	82955	31	35089	40
50	39797	71	95088742	71	03757	03	84985	31	33216	30
44 0	44269	71	77171	70	86990154	01	87017	31	31342	74
10	48740	72	65601	69	76552	01	89045	31	29469	73
20	53212	71	54032	67	62951	00	91081	31	27595	74
30	57683	71	42465	65	49352	00	93113	33	25721	75
40	62154	71	30900	64	35954	00	95146	33	23846	76
50	66625	71	19336	63	22158	00	97178	33	21972	77
45 0	71096	71	07773	61	08562	94	99211	33	20097	78
10	75567	71	94996212	60	86894968	91	8101244	34	18222	79
20	80038	71	84652	58	81374	90	03278	34	16347	80
30	84509	70	73094	56	67783	88	05331	34	14472	81
40	88975	71	61538	54	54193	87	07345	34	12596	82
50	93450	70	49984	52	40605	86	09379	35	10720	83
46 0	97910	71	38432	51	27018	85	11414	35	08844	84
10	38702351	70	26881	50	13433	84	13448	35	06968	85
20	06861	70	15331	48	86799848	83	15483	36	05092	86
30	11331	70	03783	46	86265	82	17518	36	03215	87
40	15801	69	94892237	45	72683	81	19554	37	01338	88
50	20171	69	80692	44	59202	80	21590	37	92199461	89
47 0	24741	69	69148	42	45521	78	23627	37	97584	90
10	29211	69	57606	41	31943	77	25663	37	95706	91
20	33681	69	46065	39	18365	76	27700	38	93828	92
30	38150	70	34526	37	04789	74	29737	38	91950	93
40	42620	70	22985	35	86691235	73	31774	38	90072	94
50	47089	70	11454	33	77642	72	33812	38	88194	95
60	51559	70	94799921	33	64072	70	35849	37	86315	96

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S. M.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48 0	38751559	6944	94799921	32	86664072	70	8135849	38	92186315	60
10	56028	6944	88389	31	50502	38	37887	35	84436	50
20	60497	6944	70858	30	36932	68	39926	38	82557	40
30	64966		65328		23364	66	41964	39	80678	30
40	69435		53801		05798	11527	44003	39	78799	20
50	73904		42275		86596233	11565	46042	40	76915	10
49 0	78373	68	30750	13	82668		48082	39	75039	0 11
10	82842	68	19227	12	69106	60	50121	40	73159	50
20	87310	69	07705	10	55544	58	52161	41	71278	40
30	91779	68	94696183	19	41984	56	54201	42	69398	30
40	96247	69	84666	17	28424	54	56242	43	67517	20
50	38800716	68	73149	15	14866	52	58283	44	65636	10
50 0	05184		61634	13	01309	50	60325	45	63755	0 10
10	09652		50121	12	86487755	48	62366	46	61873	50
20	14120		38609	11	74201	46	64408	47	59992	40
30	18588		27098	9	60648	44	66450	48	58110	30
40	23056		15589	07	47097	42	68492	49	56228	20
50	27524		04082	06	33547	40	70533	50	54345	10
51 0	31992	67	94592576	04	19999	38	72577	51	52463	0 9
10	36459	68	81072	03	06452	36	74620	52	50580	50
20	40926	68	69569	01	86392905	34	76664	53	48697	40
30	45394		58068		79361	32	78707	54	46814	30
40	49862		46569		65818	30	80751	55	44931	20
50	54325		35071		52276	28	82795	56	43047	10
52 0	58796	67	23574	95	38734	26	84840	57	41163	0 8
10	63263	68	12079	93	25195	24	86884	58	39279	50
20	67730	68	00586	91	11657	22	88925	59	37395	40
30	72197		94489094	90	86298120	20	90974	60	35511	30
40	76664		77604	89	84584	18	93020	61	33626	20
50	81131	66	66115	88	71049	16	95066	62	31741	10
53 0	85597	67	54627	86	57514	14	97113	63	29855	0 7
10	90064	66	43141	85	43982	12	99159	64	27970	50
20	94530	67	31656	83	30450	10	8202306	65	26085	40
30	98997	66	20173	81	16920	8	03253	66	24195	30
40	38903463		08692	79	03392	6	05300	67	22313	20
50	07925		94397213	77	86189865	4	07348	68	20427	10
60	12395		85736		76341	2	09395	69	18541	0 6

Grad. 67.

S.M.

Grad. 22.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
4 0	38912395	466	94385736	11476	86176341	1524	2209395	48	92118541	60
10	16861		74260		62817		11443	48	16654	50
20	21327		62785		49293		13492	49	14767	40
30	25793	65	51311	72	35771	21	15540	48	12880	30
40	30258	66	39839	70	22250	19	17589	49	10993	20
50	34724		28369	69	08731		19638	50	09105	10
55 0	39190	65	16900	68	86095212	17	21688	50	07218	0 5
10	43655		05432	66	81695	16	23737	49	05320	50
20	48120		94193966	64	68179	14	25787	50	03441	40
30	52585	66	82502	62	54665	13	27832	50	01553	30
40	57051	65	71040	60	41152	11	29888	50	92099664	20
50	61516		59580	59	27641	10	31935	50	97776	10
56 0	65981		48121	58	14131		33990	52	95887	0 4
10	70446		36663	57	00621		36042	51	93997	50
20	74911	64	25206	55	85987113	08	38093	51	92108	40
30	79375	65	13751	53	73606	07	40145	52	90218	30
40	83840	64	02298	51	60101	05	42197	53	88328	20
50	88304	65	94190847	49	46598	03	44245	53	86438	10
57 0	92769	64	79395	48	33096	02	46302	53	84548	0 3
10	97133		67950	47	19595	01	48355	54	82657	91
20	39001697	65	56503	46	06094		50409	54	80767	80
30	06162	64	45057	44	85892595	56	52462	53	78876	70
40	10626		33613	42	78097		54516	54	76985	60
50	15090	43	22171	41	65601		56570	55	75093	50
58 0	19553	64	10730	39	52105	94	58625	55	73202	40
10	24017		94099291	38	38611	93	60680	56	71300	30
20	28481		87853	36	25118	91	62735	55	69418	20
30	32945	63	76417	34	11627	90	64790	56	67525	10
40	37408		64983	33	85798137	88	66846	56	65633	0 2
50	41871	6	53550	32	84649		68901	55	63740	91
59 0	46335	5	42118	30	71161	86	70957	56	61847	80
10	50798		30688	28	57675	85	73013	57	59954	70
20	55261		19260	27	44190	84	75070	57	58061	60
30	59624		07833	25	30706	82	77127	58	56167	50
40	64187		93996408	24	17224		79184	58	54274	40
50	68650		84984	43	03742		81242	58	52380	30
60	73113		73561		85690261	81	83300	58	50485	20

Grad. 67.

S.M.

Grad. 23.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	39073113	61	93973561	21	85690161	1349	8283300	58	92050485	60
10	77575	61	62140	21	76782	1349	85358	58	48591	94
20	82038	63	50721	1419	63304	75	87417	59	46696	49
30	86501	61	39303	1419	49828	75	89475	58	44801	30
40	90963	61	27887	15	36353	74	91534	59	42906	20
50	95425	63	16472	13	22879	73	93593	60	41011	10
1	99888	61	05059	11	09406	70	95653	59	39116	96
10	39104350	46	93893648	10	85595936	69	97712	60	37220	50
20	08812	61	82238	09	82466	68	99772	60	35324	40
30	13274	61	70829	07	68997	68	8301832	61	33428	30
40	17736	61	59422	05	55529	66	03893	61	31531	20
50	22197	62	48017	04	42063	66	05954	62	29635	10
2	26659	61	36613	02	28597	63	08016	61	27738	97
10	31121	61	25211	01	15134	63	10077	61	25841	50
20	35582	62	13810	01	01671	61	12139	60	23944	40
30	40044	61	02411	00	85488210	59	14201	60	22046	30
40	44505	61	93791014	00	74751	59	16163	63	20149	20
50	48966	61	79618	95	61292	57	18326	62	18251	10
3	53427	61	68223	94	47835	56	20388	63	16353	99
10	57888	61	56829	92	34378	56	22451	64	14454	50
20	62349	61	45437	90	20922	53	24515	63	12556	40
30	66810	60	34047	88	07469	52	26578	64	10657	30
40	71271	61	22659	86	85394017	50	28642	64	08758	20
50	75731	61	11273	85	80567	49	30706	65	06859	10
4	80192	60	93699888	84	67118	48	32770	65	04959	00
10	84652	61	88504	83	53669	48	34835	66	03060	99
20	89113	60	77121	81	40221	46	36900	66	01160	50
30	93573	60	65740	79	26775	45	38965	66	91999160	40
40	98033	60	54361	77	13330	42	41031	65	97360	30
50	39202493	60	42984	76	85299888	42	43096	65	95459	20
5	06953	60	31608	74	86446	41	45162	66	93558	10
10	11413	60	20234	73	73005	39	47219	66	91658	00
20	15873	60	08861	72	59566	37	49293	67	89756	50
30	20333	59	93597489	70	46127	37	51362	68	87855	40
40	24793	60	86119	69	32690	36	53429	68	85954	30
50	29252	60	74750	68	19253	36	55497	68	84052	20
60	33712	60	63382	68	05817	36	57565	68	82150	10

Grad. 66.

S.M.

Gg

Grad. 23.

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S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	39233712	59	93563382	113	85205817	134	8357565	68	91982150	60
10	38171		52016	113	85192383	134	59633	69	80248	50
20	42630	60	40651	113	78949	134	61702	69	78345	40
30	47090		29288	61	65518	30	63770	68	76442	30
40	51549	45	17927	59	52088	28	65839	69	74540	20
50	56008	45	06468	57	38660	27	67908	70	72637	10
0	60467	58	93495211	56	25233	15	69978	69	70733	0
10	64925	59	83855	55	11808	14	72047	70	68830	50
20	69384		72500	54	85098583	24	74117	71	66926	40
30	73843	58	61146	52	84959	23	76187	72	65022	30
40	78301	59	49794	50	71536	21	78258	73	63118	20
50	82760	58	38444	49	58115	20	80329	74	61214	10
0	87218		27095	47	44695	19	82400	75	59309	0
10	91676	59	15748	46	31276	17	84472	76	57404	50
20	96135	58	04402	44	17859	16	86543	77	55499	40
30	39300593		93393058	42	04443	14	88615	78	53594	30
40	05051	57	81716	41	84991029	13	90687	79	51689	20
50	09508	58	70375	40	72616	11	92759	80	49783	10
0	13966		59035	38	64203	10	94832	81	47877	0
10	18424		47697	36	50792	9	96905	82	45971	50
20	22882	57	36361	35	37382	8	98979	83	44064	40
30	27339	58	25026	33	23974	7	8401051	84	42158	30
40	31797	57	13693	32	10567	6	03126	85	40251	20
50	36254		02361	31	84897161	5	05200	86	38344	10
0	40711		93291030	29	83755	3	07275	87	36437	0
10	45168		79701	27	70352	2	09349	88	34530	50
20	49625		68374	26	56950	1	11424	89	32623	40
30	54082		57048	24	43549	0	13499	90	30714	30
40	58539		45724	23	30149	0	15575	91	28805	20
50	62996		34401	22	16750	0	17651	92	26898	10
0	67453	56	23079	20	03351	0	19728	93	24982	0
10	71909	57	11759	18	84789955	95	21804	94	23081	50
20	76366	56	00441	17	76560	94	23881	95	21171	40
30	80822	57	93189124	15	63166	92	25958	96	19263	30
40	85279	56	77809	14	49774	91	28035	97	17351	20
50	89735		66455	13	26382	90	30113	98	15444	10
60	94191		55182		22992		32190	99	13534	0

Grad. 66.

J.M.

Grad. 23.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
12 0	39394191	4456	9315582	11311	84712992	11309	8432190	78	91913534	10 60
10	98647		43871		09603		34268	79	11624	50
10	39403103		32561		84696215		36347	78	09714	40
30	07559		21254	06	82829	85	38425	79	07803	30
40	12015	55	89948	05	69444	84	40504		05893	20
50	16470	55	93098643	04	56060		42583	80	03982	10
12 0	20926	56	87339	01	42676	81	44063	80	02071	12 047
10	25381	55	76037	00	29295	80	46742	79	00159	11 50
10	29837	56	64737		15915	79	48822	80	91898248	40
30	34292	55	53438	11299	02536	8	50902	81	96336	30
40	38747		42141	84589158	42141	7	52983	81	94424	20
50	43202		30845	75781		76	55064	82	92512	10
12 0	47657		19551	94	62405	76	57146	82	90600	13 046
10	52112		08259	92	49032	73	59227	81	88685	50
10	56567		92996968	91	35659	72	61309	82	86774	40
30	61022		85678	90	22187	70	63391	82	84861	30
40	65477	54	74390	38	08917	70	65473	83	82948	20
50	69931	55	63103	87	84495547	67	67556	83	81035	10
12 0	74386	54	51818	85	82180	67	69638	82	79121	14 045
10	78840		40534	84	68813	66	71721	83	77207	50
10	83294	55	29252	82	55447	66	73805	84	75293	40
30	87749	54	17971	81	42083	64	75888	83	73379	30
40	92203		06692	79	28720	63	77972	80	71464	20
50	96657	53	92895415	77	15359	61	80056	85	69549	10
10 0	39501110	54	84135	76	01999	60	82140	85	67634	10 044
10	05564		72865	74	84388640	59	84225	86	65719	50
10	10018		61592	73	75282	58	86310	86	63804	40
30	14473	53	50320	72	61924	55	88390	85	61888	30
40	18925	54	39050	70	48569	54	90481	86	59972	20
50	23379	53	27782	68	35215	53	92567	87	58058	10
17 0	27832		16515	67	21862	52	94653	87	56140	17 043
10	32285	54	05250	65	08510	50	96740	86	54224	50
10	36739	53	92793986	64	84295160		98826	87	52307	40
30	41192		82723	63	81810		8500915		50390	30
40	45645	52	71462	61	68462	48	03000		48473	20
50	50097	53	60203	59	55116	46	05087		46556	10
60	54550		48945	58	41770		07175	88	44638	18 042

Grad. 66.

S.M

Grad. 23.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	39554550		92748945		84241770	13	8501175	88	91844638	60
10	59003	53	37689	1256	28426	1334	09263	89	42720	50
20	63456		26434	52	15082	1344	11352	88	40802	40
30	67908	52	15180	52	01740		13440	2019	38884	30
40	72361	53	03928	50	84188399	41	15529	2019	36966	20
50	76813	4452	92692678	49	75060	39	17618		35047	10
19 0	81265		81429	47	61722	38	19707	90	33128	04
10	85717		70182	46	48385	37	21797		31209	50
20	90169		58936	45	35049	36	23887		29290	40
30	94621		47691	43	21713	33	25978	90	27370	30
40	99073		36448	41	08380	32	28068	91	25451	20
50	39603525		25207	40	84095048	31	30159		23531	10
20 0	07977	51	13967	38	81717	30	32250	92	21611	04
10	12428	52	02729	37	68387	28	34342	91	19690	50
20	16880	51	92591492	36	55059		36433	92	17770	40
30	21331		80256	34	41731	26	38525		15849	30
40	25782	52	69022	33	28405		40617	93	13928	20
50	30234	51	57789	31	15079	24	42710		12007	10
21 0	34685		46558	29	01755	22	44803		10085	03
10	39136		35329	28	83988433		46896	94	08164	50
20	43587		24101	27	75111	20	48990	93	06242	40
30	48038	50	12874	25	61791	19	51083	94	04320	30
40	52488	51	01649	24	48472	18	53177		02397	20
50	56939	51	92490425	22	35154	17	55271	95	00475	10
22 0	61390		79203	20	21837	14	57366	94	91798552	03
10	65840	50	67983	19	08523		59460	95	96629	50
20	70290		56764	18	83898205	13	61555		94706	40
30	74741	50	45546	16	81896	12	63650	96	92783	30
40	79191		34330	15	68584	11	65746		90855	20
50	83641	51	23115	13	55273	10	67842	97	88935	10
23 0	88091		11902	11	41963	07	69939	96	87011	03
10	92541		00691	10	28656		72035	97	85087	50
20	96991	49	92389481	09	15349	06	74132		83163	40
30	39701440	50	78272	07	02043	04	76229		81238	30
40	05890		67065	06	83788739		78326	98	79313	20
50	10340		55850	04	75435	02	80424		77388	10
60	14789	5	44655		62133		82522		75463	06

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Grad. 23.

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D.	Sinus.	D.
14 0	39714789	49 92344655	83762133	1350011988	98	91775463	60
10	19238	50 33453	48833	84610	99	73537	50
20	13688	22252	35533	86719	98	71611	40
30	28137	4449	11052	22235	1099	69685	30
40	32586	92299854	68938	90916	2099	67759	20
50	37035	88657	83695642	93075	3100	65832	10
15 0	41484	77462	82348	95114	4100	63906	035
10	45933	66269	69055	97214	5100	61979	50
20	50381	55077	55763	99314	6100	60052	40
30	54830	43886	42472	8601414	7100	58125	30
40	59278	32697	29182	03515	8100	56198	20
50	63727	21509	35893	05616	9100	54270	10
16 0	68175	10322	02604	67718	0100	52342	034
10	72623	92199137	83589318	09819	1100	50414	50
20	77072	87954	76033	11921	2100	48485	40
30	81520	76772	62749	14023	3100	46557	30
40	85968	65592	49467	16125	4100	44628	20
50	90415	54413	36185	18228	5100	42699	10
17 0	94863	43235	22905	20330	6100	40770	033
10	99311	32059	09626	22433	7100	38841	50
20	39803758	20885	83496348	24537	8100	36911	40
30	08206	09712	83072	26640	9100	34981	30
40	12653	92098543	69797	28744	0100	33051	20
50	17101	87371	56123	30848	1100	31121	10
18 0	21548	76202	43249	32953	2100	29190	032
10	25995	65035	29978	35057	3100	27259	50
20	30442	53870	16708	37162	4100	25328	40
30	34889	42706	03439	39267	5100	23397	30
40	39336	31544	83390171	41373	6100	21466	20
50	43782	20323	76904	43479	7100	19534	10
19 0	48229	09223	63637	45586	8100	17603	031
10	52676	91998065	50373	47692	9100	15671	50
20	57122	86908	37109	49799	0100	13738	40
30	61568	75753	23847	51966	1100	11806	30
40	66015	64600	10587	54013	2100	09873	20
50	70461	53448	83297327	56121	3100	07940	10
60	74907	42297	84068	58229	4100	06007	030

Grad. 66.

S.M.

Grad. 23.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
30 0	39874907	4446	91942297	11149	83284068	13158	8658229	09	91706007	40
10	79353		31148		70810		60338	09	04074	33
20	83799		20000		57554		62446	08	01141	40
30	88245	45	05854	45	44299	54	64555	2109	00107	1914
40	92690	46	91897709	43	31045	52	66664	2109	91698273	20
50	97136	46	86566	42	17793		68773	10	96339	12
31 0	39901581	45	75424	40	04541	49	70883	09	94404	34
10	06027	46	64284	39	83191292		72992	10	92470	35
20	10472	45	53145	38	78043	48	75102	11	90535	36
30	14917	46	42007	36	64795	47	77212	12	88600	37
40	19363	45	30871	34	52348	45	79323	11	86665	38
50	23808	44	19737	33	38303	42	81434	12	84710	39
32 0	08252	45	08604	31	35058	41	83546	11	82784	40
10	32697	45	91797473	30	11816	39	85657	12	80858	41
20	37142	44	86343	29	83098574	40	87769	13	78922	42
30	41687	44	75214	27	85333	37	89881	14	76985	43
40	46031	45	64087	26	72093	36	91994	15	75049	44
50	50476	44	52961	24	58854	35	94107	16	73112	45
33 0	54920	44	41857	22	45617	34	96220	17	71175	46
10	59365	43	39715	21	32382	33	98333	18	69238	47
20	63809	44	19594	20	19147	32	8700447	19	67301	48
30	68253	43	08474	18	05914	31	02560	20	65363	49
40	72697	44	91697356	17	82992682	30	04674	21	63425	50
50	77141	43	86239	16	79451	29	06788	22	61487	51
34 0	81585	43	75123	14	66220	28	08903	23	59549	52
10	86028	44	64009	12	52992	27	11017	24	57610	53
20	90472	43	52897	11	39765	26	13132	25	55672	54
30	94916	43	41786	10	26535	25	15247	26	53733	55
40	99359	44	30676	9	13313	24	17363	27	51794	56
50	40003802	44	19568	8	00089	23	19475	28	49854	57
35 0	08246	43	08462	6	82886866	22	21596	29	47915	58
10	12689	43	91597357	5	73645	21	23712	30	45975	59
20	17132	42	86253	4	60424	20	25829	31	44035	60
30	21575	42	75157	3	47105	19	27946	32	42095	61
40	26018	41	64051	2	33987	18	30064	33	40154	62
50	30461	42	52952	1	20770	17	32182	34	38214	63
60	34905	42	41854	1099	07554	16	34300	35	36273	64

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Grad. 23.

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N. S.	Sinus	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus	D.
6 0	40034993		91541854		82807554	1	8734300		91636273	60
10	393446	43	30758	106	82794339	1215	36419	19	34332	41
20	43788	43	19663	106	81126		38537	18	32391	40
30	48231	43	08569		67913		40656	11	30449	30
40	52673	44	91497477	92	54702	11	42775	10	28507	20
50	57115	44	8638	90	41493	09	44894	10	26565	10
60	61557		75198	89	28284	06	47014	19	24623	023
70	65999		64211	87	15078		49133	19	22681	50
80	70441		53125	86	01872		51253	20	20738	40
90	74883		42040	85	81688667	05	53373	22	18796	42
100	79325		30957	83	75463	04	55494	11	16853	43
110	83767		19875	82	62260	03	57615	12	14910	10
120	88208	41	08795	80	49058	02	59737	21	12966	44
130	92650	42	91397717	78	35859	11	61858	22	11022	50
140	97091	42	86640	76	22660	10	63980	23	09079	43
150	10151533	41	75564	74	09462	97	66102	24	07135	44
160	05974	41	64490	73	82596265	96	68225	23	05190	45
170	10415	42	53417	71	83069	95	70348	24	03246	45
180	14856		42345	69	69874	93	72471	23	01301	021
190	19297		31276	68	56681	91	74595	23	91592356	50
200	23737	40	20208	67	43490	90	76718	24	97411	40
210	28178	41	06141	66	30299	88	78842	25	95466	30
220	32619	40	91293075	64	17109	86	80966	26	93540	20
230	37059	41	87011	63	03921	84	83090	27	91574	10
240	41500	40	75948	61	92490733	82	85215	26	89618	020
250	45940	40	64887	60	77547	81	87340	26	87682	50
260	50380	41	53827	59	64361	80	89466	25	85736	40
270	54821	40	42768	56	51177	79	91591	26	83789	30
280	59261	40	31712	55	37995	78	93747	27	81842	20
290	63701	39	20657	54	24814	77	95845	28	79995	10
300	68140	40	09602	52	11634	76	97969	27	77948	019
310	72580	40	91198551	51	82398455	75	8800096	28	76000	50
320	77020	39	87500	50	85277	74	02223	29	74052	40
330	81459	40	76450	48	72100	73	04350	28	72104	30
340	85899	40	65402	46	58924	72	06478	29	70156	20
350	90338	40	54356	45	45751	71	08605	28	68208	10
360	94778	40	43311	44	32578	70	10733	28	66259	018

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S.M.

M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42°	40194778	439	91143311	1043	82332578	1312	8810733	29	91566259	60
10	99217		32268		19406		12862	28	64311	48
20	40203656		21216		06236		14990		62362	49
30	08095		10185	39	82293066	68	17129	30	60412	50
40	12534		91099146	38	79898	67	19248	31	58463	49
50	16973		88108	37	66731		21377	30	56513	10
43°	21412	38	77072	35	53564	65	23507		54563	017
10	25850	39	66036	34	40399		25637	31	52613	50
20	30289	38	55002	32	27234	62	27768	30	50663	40
30	34727	39	43970	30	14072	61	29898	31	48712	51
40	39166	38	32940	29	00911	60	32029		46762	50
50	43604		21911	28	32187751	59	34160	32	44813	51
44°	48042		10883	26	74592	58	36291		42859	018
10	52480		90999857	25	61434	57	38423	32	40908	50
20	56918		88832	24	48277	56	40555		38956	40
30	61356		77808	22	35121	55	42687	33	37005	51
40	65794	37	66786	20	21966	52	44820	32	35053	52
50	70231	38	55766	19	08814		46952	33	33100	53
45°	74669	37	44747	17	82095662	51	49085	34	31148	015
10	79106	38	33730	16	82511	49	51219	33	29195	50
20	83544	37	22714	15	69362		53352	34	27242	40
30	87981		11699	13	56213	47	55486		25289	50
40	92418	38	00686	12	43066		57620	35	23336	51
50	96856	37	90889674	11	29919	46	59755		21382	52
46°	40501293		78663	09	16773	44	61890		19429	014
10	05730	36	67654	07	03629	43	64025	36	17475	50
20	10166	37	56647	06	81990486	41	66161	35	15520	40
30	14603		45641	04	77345	40	68296	36	13566	51
40	19040	36	34637	03	64205	39	70432		11611	50
50	23476	37	23634	02	51066		72568	37	09657	51
47°	27913	36	12632	00	37927	36	74705	36	07702	013
10	32349		01432		214791		76841	37	05746	50
20	36785	37	90790633	10909	11655	34	78978		03791	40
30	41222	36	79636	94	81898521		81115	38	01835	51
40	45658		68640	93	85387	32	83253		91499879	50
50	50094		57646		72255	31	85391		97922	51
60	54530		46653		59124		87529		95967	52

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D	Sinus.	D.
48 0	40354530		90746653	1091	81859124	1330	8887529	39	1495967	60
10	58965	35	35662	1091	45994	1330	89668	39	54010	50
20	63401	36	24672	1091	32866	1330	91806	39	92053	40
30	67837		13683	87	19738	16	93945	39	90096	30
40	72272	35	02696	86	06612	16	96084	39	88134	20
50	76708	36	90691710	84	31793486	14	98224	140	86182	10
49 0	81143	45	80726	83	80362	23	8900364	41	84224	0 11
10	85578		69747	81	67239	23	02504	41	82266	50
20	90013		58762	80	54117	23	04645	40	80308	40
30	94448		47782	78	40997	18	06785	41	78350	30
40	98883		36804	76	27878	18	08926	42	76392	20
50	40463318		25827	74	14760	15	11067	42	74433	10
50 0	07753		14855	74	01642	15	13209	41	72474	0 10
10	12188		03877	73	31688527	15	15350	42	70515	50
20	16622	34	90592904	71	75412	13	17492	42	68556	40
30	21057	35	81933	70	62299	13	19634	43	66596	30
40	25491	34	70963	68	49186	11	21777	43	64636	20
50	29925	35	59993	67	36075	11	23920	44	62676	10
51 0	34360	34	49028	65	22964	08	26064	44	60716	0 9
10	38794		38063	64	09856	08	28207	43	58756	50
20	43228		27095	63	31596748	07	30351	44	56795	40
30	47662		16136	61	83641	05	32495		54834	30
40	52095	33	05175	60	70536	05	34639		52873	20
50	56529	34	90494215	59	57431	04	36784	45	50911	10
52 0	60963	33	83256	57	44327	02	38929		48950	0 8
10	65396	34	72295	56	31225	01	41074		46989	50
20	69830		61343	54	18124	00	43219	46	45027	40
30	74263		50389	53	05024		45365		43064	30
40	78696		39436	51	81491925		47511		41102	20
50	83129		28485	50	78828		49657		39140	10
53 0	87562		17535	48	65731		51804	47	37177	0 7
10	91995		06587	47	52636	95	53951		35214	50
20	96428		90395640	46	39541	93	56099	48	33251	40
30	40500861		84694	44	26448	92	58246	47	31287	30
40	05294		73750	42	13356	90	60394	48	29323	20
50	09726	32	62808	41	00266	85	62542		27360	10
60	14159	33	51867		81387177		64690		25396	0 6

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54	40514159	32	90351867	1	81387177	1	8964690	49	91425996	65
10	18591		40928	0	74089	0	66839	49	23431	50
20	23023		29990	0	61003	0	68987	48	21467	64
30	27456	33	19053		47917		71136	49	19502	1965
40	31888	44	08118	35	34833	84	73285		17537	30
50	36320	44	90297184	34	21749	83	75435	50	15572	10
55	40752	31	86251	33	08666	82	77585	50	13607	66
10	45183		75320	31	81295584	80	79736	51	11641	50
20	49615	31	64390	30	82504	79	81886	50	09675	40
30	54047	31	53462	18	69425	78	84037	51	07709	30
40	58478	31	42535	27	56347	78	86188		05743	20
50	62910	31	31610	25	43273	76	88339		03777	10
56	67341	31	20686	24	30195	73	90491	52	01810	67
10	71772		09764	22	17122	73	92642	51	91399843	50
20	76203		90198843	21	04049	72	94794	52	97876	40
30	80634		87923	20	81190977	71	96946	53	95909	30
40	85065		77005	18	77906	70	99099		93941	68
50	89496		66088	17	64836		9007152	54	91973	10
57	93927		55172	16	51766	68	03406		90005	0
10	98358		44258	14	38698	67	05560		88037	3
20	40601788	30	33345	13	25631	67	07714		86069	50
30	07212	31	22434	11	12566	65	09868		84100	69
40	11649	30	11524	10	81099501	62	12023	55	82132	30
50	16079	31	00616	08	86435		14177	54	80163	20
58	20510	31	90089709	07	73377	61	16332	55	78193	69
10	24940	30	78804	05	60316	61	18488	56	76224	50
20	29370		67900	04	47157	59	20643	55	74254	70
30	33800		56997	03	34198		22799	56	72284	60
40	38229	29	46096	01	23141	57	24955		70314	30
50	42659	30	35196	00	08085	56	27111		68344	20
59	47089	29	24297	00	80995029		29268	57	66373	71
10	51518	30	13400	00	81975	54	31425	58	64403	0
20	55948	29	02504	94	68921	51	33583	57	62432	50
30	60377		89997610	92	55870	50	35940		60461	40
40	64806		80718	91	42820	49	37898	58	58490	30
50	69235		69827	90	29771	48	40056		56518	20
60	73664		58937		16723		42214		54546	10

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D. Sinus.	D.
0	40673664	89958937	80916723	9042214	91354546	60
10	78093	48049	03676	44373	52574	72
20	82522	37162	80890630	46532	50601	40
30	86951	26276	77585	48691	48629	30
40	91380	15392	64541	50851	46656	20
50	95808	04509	51499	53010	44683	10
60	40700237	89893628	38458	55170	42710	059
70	04665	82748	25417	57331	40737	50
80	09093	71869	12378	59491	38764	40
90	13521	60992	80799340	61652	36790	30
100	17949	50117	86304	63813	34816	20
110	22377	39243	73268	65975	32842	10
120	26805	28370	60233	68137	30867	058
130	31233	17499	47200	70299	28893	50
140	35661	06629	34167	72462	26918	40
150	40088	89795760	21136	74624	24943	30
160	44516	84893	08106	76787	22968	20
170	48943	74027	80695077	78950	20992	10
180	53371	63163	82049	81114	19017	057
190	57798	52300	69023	83277	17041	50
200	62225	41438	55997	85441	15065	40
210	66652	30578	42973	87605	13088	30
220	71079	19720	29950	89770	11122	20
230	75506	08863	16928	91935	09135	10
240	79933	89698007	03906	94101	07158	056
250	84359	87153	80590887	96266	05181	50
260	88786	76300	77868	98432	03203	40
270	93212	65448	64850	9100598	01226	30
280	97639	54598	51833	02765	91299248	20
290	40803065	43749	38817	04932	97270	10
300	06495	32901	25802	07099	95292	055
310	10917	22055	12788	09267	93383	50
320	15343	11210	80499776	11434	91335	40
330	19769	00366	86764	13602	89356	30
340	24195	89589524	73754	15779	87377	20
350	28620	78684	60746	17938	85397	10
360	33046	67845	47738	20107	83418	054

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S.M.

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D. Sinus.	D.
6 0	40833046	26 89567845	10838 80447738	1007 9120107	69 91283418	60
10	37472	57007	34731	22276	81438	50
20	41897	46171	21725	24446	79458	40
30	46322	35336	08721	26615	77478	30
40	50747	24503	80395718	28785	75497	20
50	55173	13671	82716	30955	73517	10
7 0	59598	02840	69715	33125	71536	053
10	64023	89492011	56715	35296	69555	50
20	68447	81183	43716	37467	67574	40
30	72872	70356	30717	39639	65592	30
40	77297	59531	17721	41810	63611	20
50	81721	48708	04726	43982	61629	10
8 0	86146	37886	80291732	46154	59647	052
10	90570	27065	78738	48327	57664	50
20	94994	16245	65746	50499	55682	40
30	99418	05427	52755	52672	53699	30
40	40903842	89394611	39766	54845	51716	20
50	08266	83796	26777	57019	49733	10
9 0	12690	72982	13789	59193	47749	051
10	17114	62170	00803	61367	45766	50
20	21538	51359	80187817	63542	43782	40
30	25961	40549	74833	65716	41798	30
40	30385	29741	61850	67891	39814	20
50	34808	18934	48868	70066	37829	10
10 0	39231	08129	35888	72241	35845	050
10	43655	89297325	22908	74417	33860	50
20	48078	86522	09929	76593	31875	40
30	52501	75720	80096950	78770	29889	30
40	56924	64921	83975	80946	27903	20
50	61346	54123	71000	83123	25918	10
11 0	65769	43327	58037	85300	23932	049
10	70192	32532	45054	87478	21946	50
20	74614	21738	32083	89655	19960	40
30	79037	10945	19142	91833	17973	30
40	83459	00154	06143	94011	15986	20
50	87881	89189364	79993175	96189	13909	10
60	92304	78576	80208	98368	12012	048

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
12 0	40992303		89178576		79980208		9198368		91212012		60
10	96725	4 12	67789	10787	67242	12966	9100547	79	10024	1968	50
20	41001147		57093	80	54276		02727	80	08037	888	40
30	05569		46219	83	41313		04906	79	06049		30
40	09991		35436	81	28350	61	07086	80	04060	89	20
50	14413		24655	80	15389		09266	81	02072	88	10
13 0	18834	21	13875	78	02428	58	11447	80	00084	89	047
10	23256	22	03097	77	79889470		13627	81	91198095		
20	27677	11	39092320	76	76512		15808		96106		40
30	32098		81544	74	63555	57	17989	82	94117	90	30
40	36519		70770	73	50599	56	20171		92127	89	20
50	40940		59997	72	37644	55	22353	83	90138	90	10
14 0	45361		49225	70	24689	52	24536	82	88148		046
10	49782		38455	69	11737		26718		86158		50
20	54203		27686	68	79798785	51	28901	82	84168		40
30	58624	20	16918	66	85834	49	31084		82177	91	30
40	63044	11	06152	64	72885	48	33267		80186		20
50	67465	10	88995388	63	59937	47	35451	84	78195		10
15 0	71885	11	84625	62	46990	46	37635		76204		045
10	76306	20	73869	61	34044	45	39819	85	74213	92	50
20	80726		63102	59	21098	43	42004	84	72221	91	40
30	85146		52343	57	08155	42	44188	85	70230	92	30
40	89566		41586	56	79695213	41	46373		68238		20
50	93986		30830	55	82272		48558	86	66246		10
16 0	98406	19	20075	53	69331	38	50744	85	64253	93	044
10	41102825	10	09322	52	56393		52929	86	62261	92	50
20	07245	19	88898570	51	43455	37	55115		60268	93	40
30	11664	20	87819	49	30518	36	57301	87	58275	94	30
40	16084	19	77070	48	17582	35	59488		56287		20
50	20503		66322	46	04647	33	61675		54288	93	10
17 0	24922	10	55576	45	79591714		63862	88	52294		043
10	29342	19	44831	44	78781	31	66050		50300		50
20	33761		34087	42	65850	30	68237	87	48306		40
30	38180	18	23345	41	52920	29	70425		46312	95	30
40	42598	19	12604	39	39991	28	72613	89	44317	94	20
50	47017		01865	38	27063	27	74802		42323		10
60	51436		88791127		14136		76991		40328	95	042

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S.M

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f. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinu.	D.	
8	41151436	18	88791127	10737	79514136	12926	9276991	89	91140328	96	60
10	55854	19	80390	10737	01210	12926	79180	80	38332	95	50
20	60273	18	69655	10737	79488285	12926	81370	89	36337	96	40
30	64691	19	58921	32	75362	21	83559	90	34341	95	30
40	69110	19	48189	31	62440	21	85749	90	32346	96	20
50	73528	448	37458	30	49519	18	87939	91	30350	97	10
19	77946	448	26728	28	36598	18	90130	90	28353	96	041
10	82364	17	16000	27	23680	17	92320	91	26357	95	50
20	86782	17	05273	26	10762	17	94511	91	24366	96	40
30	91199	18	88694547	24	79397845	16	96702	92	22363	97	30
40	95617	18	83823	23	84929	15	98894	92	20366	98	20
50	41200035	17	73100	22	71014	15	9301086	93	18369	98	10
20	04452	18	62378	21	59099	13	03279	92	16371	97	040
10	08870	18	51657	20	46186	13	05471	93	14374	98	50
30	13287	17	40937	18	33273	11	07664	93	12376	99	40
30	17704	16	30215	16	20362	10	09857	2194	10377	98	30
40	22121	14	19503	14	07452	08	12051	94	08379	99	20
50	26538	12	08789	12	79294544	06	14245	95	06380	98	10
21	30955	11	88598077	11	81638	04	16439	95	04382	99	039
10	35372	10	87366	10	68732	04	18634	94	02383	99	50
20	39789	09	76656	09	55828	03	20828	95	00384	2000	40
30	44205	08	65947	08	42924	03	23023	96	91098384	30	30
40	48622	07	55235	07	30021	02	25218	96	96384	20	20
50	53038	06	44532	06	17119	02	27413	96	94384	10	10
22	57455	04	33826	04	04217	06	29609	97	92384	038	30
10	61871	03	23122	03	79191317	06	31805	97	90384	01	50
30	66287	01	12415	01	78417	12897	34002	96	88383	40	40
30	70703	1060	01718	09	65520	93	36198	97	86382	30	30
40	75119	88491019	88491019	07	52624	92	38395	97	84383	20	20
50	79535	80322	80322	06	39730	91	40592	98	82380	10	10
13	83951	69626	69626	05	26837	90	42789	98	80379	01	037
10	88366	58931	58931	04	13944	87	44987	98	78377	50	50
20	92782	48237	48237	03	01052	91	47185	99	76375	40	40
30	97197	37544	37544	02	79088161	90	49383	99	74373	30	30
40	41301643	26853	26853	01	75271	87	51582	98	72371	20	20
50	06028	16164	16164	00	62384	88	53780	99	70369	10	10
60	10443	05476	05476	00	49497	87	55979	99	68366	03	036

Grad. 65.

I.S.M.

Grad. 24.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
24 0	41310441	2	88405476	10687	79049497	11887	9355979	91068366	60	60
10	14858	1	88394789	83	36616	83	58179	66363	50	50
20	19273	1	84103	81	23725	31	60378	64360	40	40
30	23688	14	73419	80	10841	80	62578	62357	30	30
40	28103	15	62736	79	78997938	79	64778	60353	20	20
50	32517	14	52055	78	25077	78	66978	58350	10	10
25 0	36932	14	41375	76	72198	76	69179	56346	035	035
10	41346	15	30696	74	59316	74	71380	54342	50	50
20	45761	14	20018	73	46436	73	73582	52337	40	40
30	50175	13	09342	72	33559	72	75783	50332	30	30
40	54589	14	88298668	71	20683	71	77983	48337	20	20
50	59003	13	87995	70	07808	70	80187	46322	10	10
26 0	63417	13	77323	69	78894933	69	82390	44317	034	034
10	67831	14	66652	68	82059	68	84593	42312	50	50
20	72245	13	55983	67	69187	67	86796	40306	40	40
30	76659	13	45325	66	56315	66	89000	38300	30	30
40	81072	14	34649	65	43446	65	91203	36294	20	20
50	85486	13	23984	64	30577	64	93407	34288	10	10
27 0	89899	14	13320	62	17709	62	95611	32281	033	033
10	94313	13	02658	61	04842	61	97816	30275	50	50
20	98726	13	88191997	60	78791977	60	9400020	28268	40	40
30	1403139	12	81337	58	79112	58	02225	26260	30	30
40	07552	13	70679	57	66249	57	04430	24253	20	20
50	11965	12	60022	56	53386	56	06636	22245	10	10
28 0	16378	12	49367	55	40525	55	08842	20238	032	032
10	20791	13	38713	54	27665	54	11048	18230	50	50
20	25203	12	28060	53	14805	53	13255	16221	40	40
30	29616	12	17409	50	01948	50	15461	14213	30	30
40	34048	13	06759	48	78689091	48	17668	12204	20	20
50	38441	12	88096111	47	76236	47	19875	10195	10	10
29 0	42853	12	85464	46	63381	46	22083	08186	031	031
10	47265	13	74818	45	50528	45	24290	06177	50	50
20	51677	12	64173	44	37675	44	26498	04167	40	40
30	56089	11	53530	43	24824	43	28706	02158	30	30
40	60500	12	42889	40	11974	40	30915	00148	20	20
50	64912	11	32249	39	78599125	39	33124	90998137	10	10
60	69324	10	21616	38	86226	38	35334	96127	030	030

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S.M.

M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
30	41469324	12	88021610	10638	78586276	47	9435334	09	90996127	11	60
10	73736	11	10972	33	73429	46	37543	10	94116	11	50
20	78147	12	00336	31	60583	45	39753	11	92106	10	40
30	82559	4+11	87989701	33	47738	44	41963	11	90095	11	30
40	86970	4+11	79068	31	34894	43	44174	12	88083	11	20
50	91381	4+11	68436	31	22051	42	46385	11	86072	10	10
31	95792	10	57805	29	09209	41	48596	12	84060	2012	029
10	41500203	10	47176	28	78496368	39	50808	11	82048	11	50
20	04614	10	36548	27	83529	37	53019	12	80036	10	40
30	09025	10	25921	25	70690	36	55231	12	78024	13	30
40	13436	10	15296	24	57853	35	57443	13	76012	13	20
50	17846	10	04672	23	45017	34	59655	13	73999	14	10
32	22256	11	87894049	21	32181	34	61868	14	71986	14	028
10	26667	10	83428	20	19347	32	64081	14	69973	14	50
20	31077	11	72808	19	06513	31	66295	13	67960	14	40
30	35488	10	62189	17	78393681	30	68508	14	65946	15	30
40	39898	10	51575	16	80850	29	70722	15	63932	15	20
50	44308	10	40956	14	68020	28	72936	15	61918	15	10
33	48718	09	30342	13	55192	27	75150	15	59904	15	027
10	53127	10	19729	12	42364	26	77365	16	57829	14	50
20	57537	10	09117	11	29537	25	79580	16	55875	15	40
30	61947	09	87798506	09	16711	24	81795	16	53860	15	30
40	66356	09	87897	07	03886	23	84011	17	51845	16	20
50	70766	09	77290	06	78291064	22	86226	17	49829	16	10
34	75175	09	66684	05	78242	21	88442	17	47814	16	026
10	79584	09	56079	04	65420	20	90655	18	45798	16	50
20	83993	09	45475	02	52600	19	92875	18	43782	17	40
30	88402	09	34874	00	39781	18	95092	18	41766	17	30
40	92811	09	24273	00	26964	17	97309	19	39750	17	20
50	97220	09	13674	10509	14147	16	99527	19	37733	17	10
35	1601629	08	03076	96	01331	15	9501745	19	35716	18	025
10	06038	08	87692479	94	78188516	14	03963	19	33699	18	50
20	10446	08	81883	92	75701	13	06182	18	31682	18	40
30	14854	09	71285	91	62885	12	08400	18	29665	18	30
40	19263	08	60697	90	50078	11	10619	19	27647	18	20
50	23671	08	50106	90	37268	10	12838	20	25629	18	10
60	28079	08	39516	90	24458	9	15058	20	23611	19	024

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M. S.	Sinus.	D.	Logarith.	D.	Difference.	D.	Logarith.	D.	Sinus.	D.	
36 °	41628079		87639516		78124458		9515058		90923611		60
10	32487		28927		11650		17277		21592		50
20	26895		18340		78098843		19497		19574		40
30	41303		07754		86037		21717		17555		30
40	45711		87597170		73232		23938		15536		20
50	50119		86587		60428		26159		13517		10
37 °	54526		76005		47624		28381		11498		023
10	58934		65425		34823		30602		09478		50
20	63341		54846		22022		32824		07459		40
30	67748		44268		09223		35046		05439		30
40	72155		33692		77996424		37168		03418		20
50	76562		23117		83626		39491		01398		10
38 °	80969		12541		70829		41714		90899377		022
10	85376		01971		58034		43937		97356		50
20	89783		87491400		45239		46161		95335		40
30	94190		80830		32446		48384		93314		30
40	98596		70262		19654		50608		91293		20
50	11703003		59695		06863		52832		89271		10
39 °	07409		49130		77894073		55057		87249		033
10	11815		38566		81284		57282		85227		50
20	16222		28003		68495		59508		83204		40
30	20628		17441		55708		61733		81182		30
40	25034		06881		42922		63955		79159		20
50	29440		87396322		30137		66125		77136		10
40 °	33845		85765		17354		68411		75113		020
10	38251		75209		04571		70638		73090		50
20	42657		64654		77791785		72865		71066		40
30	47062		54100		75008		75092		69042		30
40	51468		43548		66228		77320		67018		20
50	55873		32997		53450		79547		64994		10
41 °	60278		22448		40673		81775		62969		019
10	64683		11900		27896		84004		60944		50
20	69088		01353		15121		86232		58919		40
30	73493		87190807		02341		88461		56894		30
40	77898		80263		77689573		90690		54869		20
50	82303		69721		76802		92915		52844		10
60	86707		55180		64031		95149		50818		018

Grad. 65.

S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.
42	41786707		87259180		77664031		9595149		40150111
10	911112	05	48640	10540	51261	1120	97375	30	437751
20	95516	04	38101	10540	38491	1120	99612	31	441524
30	99921	05	27564	10540	25724	1120	9601840	30	44775
40	41804325	+	7028	36	13957	65	04071	31	45011
50	08729	+	06494	34	00192		06332	30	40621
43	13133		87195961	33	77587427	63	08554	31	45611
10	17537		85429	32	74664		10755	31	46011
20	21941		74898	31	61901		12997	31	46411
30	26345	03	64368	30	49134	62	15229	31	46811
40	30748	04	53840	28	36378	59	17462	31	47211
50	35152	03	43314	25	23619		19695	31	47611
44	39555		32789	24	10860	57	21919	34	48011
10	43959	04	22265	23	79498105		24162	33	48411
20	48362	03	11712	21	68346		26396	33	48811
30	52765		01221	20	74591		28630	34	49211
40	57168		87090701	18	59837	54	30864	35	49611
50	61571		80183	17	47085	53	33099	35	50011
45	65974		69666	16	34332	52	35334	36	50411
10	70377	02	59150	15	21581	51	37569	36	50811
20	74779	03	48635	13	08830	48	39805	36	51211
30	79182	02	38122	12	77396081		42040	37	51611
40	83584	03	27610	10	8333	46	44276	37	52011
50	87987	01	17100	09	70582	45	46512	37	52411
46	92389		06591	08	5784	44	48746	38	52811
10	96791		86996083	07	45091		50985	38	53211
20	41901193		85576	06	32354	42	53222	38	53611
30	05595		75071	05	19012	41	55459	39	54011
40	09997		64568	04	06871	40	57695	39	54411
50	14394	01	54066	03	7704131	39	59931	39	54811
47	18800		43565	02	81391	38	62167	40	55211
10	23202	01	33065	01	68652	37	64403	40	55611
20	27603	01	22567	01	55912	36	66639	40	56011
30	32005	01	12070	01	43174	35	68875	40	56411
40	36406		01575	01	30444	34	71111	40	56811
50	40807		86891071	01	17711	33	73347	40	57211
60	45208		80587	01	04978	32	75583	40	57611

Grad. 25.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
1	414108	4401	85880588	10492	77204778	12733	9675610	41	90777748	60
2	49609		70096		77192145		77851	41	75714	50
3	54010		59606		79515		80091	40	73680	40
4	58111		49117	87	66785		82331	241	71646	30
5	62812	00	38630	86	54057	28	84573		69612	20
6	67212	01	28144	85	41330	27	86814	40	67577	10
7	71613	00	17659	84	28603	26	89056	40	65543	0 II
8	76013		07175	83	15877	25	91298	43	63508	50
9	80413	10	86796693	81	03152	23	93541	42	61473	40
10	84814	00	86212	79	77090435	12	95783	43	59437	30
11	89214		75733	78	77707	21	98016		57402	20
12	93614	94	65255	77	64986	20	9700269		55366	10
13	98013	00	54778	76	52266		02512	44	53330	0 IO
14	02413	00	44302	75	39546	19	04756		51294	50
15	06813		34821	75	26817	18	07000	45	49257	40
16	11213	4100	23354	74	14109	15	09245	44	47220	30
17	15612		12885	73	01391	14	11489	45	45183	20
18	20011	00	0241	72	6488675	14	13734	46	43146	10
19	24411	95	86691945	71	75965		15979	46	41109	0 9
20	28810		81470	70	63251	12	18225	45	39072	50
21	33209		71008	69	50539	11	20470	46	37034	40
22	37608		60544	68	37828	10	22716		34996	30
23	42007		50080	67	25118	09	24962	47	32958	20
24	46406		39618	66	12409	08	27205		30920	10
25	50805	98	20157	65	6899701	07	29456		28881	0 8
26	55203		18697	64	86994		31703	48	26842	50
27	59601	99	08238	63	74287	04	33941	47	24803	40
28	64000	98	86597781	62	61583		36198	46	22764	30
29	68398		87325	61	48879	02	38446	48	20725	20
30	72797	98	76871	60	36177		40694	49	18685	10
31	77195		66418	59	23475	00	42943		16645	0 7
32	81593		55966	58	10775		45191	48	14605	50
33	85991	97	45515	57	76798075	1698	47440	49	12565	40
34	90388		35066	56	85377		49689	50	10524	30
35	94786	98	24618	55	72679		51939		08483	20
36	99184		14172	54	59983		54189	51	06442	10
37	03581	97	03727	53	47287		56440		04401	0 6

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S.M.

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A. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
4 0	42103581		86503727	1044	76747287	95	9716440	111	9204101	11
10	07979	98	86493283	1044	34592	94	58691	111	92100	12
20	12376	97	82850	1044	21898	92	60941	111	90910	13
30	16773	97	72399	39	09206	91	63193	112	90672	14
40	21170		61960	38	76696515	91	65445	112	90435	15
50	25567		51522	37	83826	90	67696	112	90198	16
55 0	29964		41085	37	71137	89	69947	112	90100	17
10	34361		30649	36	58448	88	72201	112	90000	18
20	38758		20214	35	45761	87	74455	112	89900	19
30	43155		09781	34	33075	86	76706	112	89800	20
40	47551	96	86399350	34	20391	85	78959	112	89700	21
50	51948	97	88920	33	07705	84	81212	112	89600	22
56 0	56344	96	78491	29	16595025	81	83466	112	89500	23
10	60740		68063	28	82344	80	85719	112	89400	24
20	65136		57636	27	69663	79	87973	112	89300	25
30	69532		47211	25	56983	78	90228	112	89200	26
40	73928		36787	24	44304	77	92483	112	89100	27
50	78324		26365	23	31627	76	94738	112	89000	28
57 0	82720	95	15544	20	18950	75	96994	112	88900	29
10	87115	96	05514	19	06175	74	99249	112	88800	30
20	91511	95	86295105	18	76493600	73	9801505	112	88700	31
30	95906	96	84687	16	80926	72	03701	112	88600	32
40	42200302	95	74271	14	68285	71	06018	112	88500	33
50	04697		63857	13	55582	70	08275	112	88400	34
58 0	09092		53444	12	42911	69	10531	112	88300	35
10	13487		43032	11	30243	68	12797	112	88200	36
20	17882		32621	10	1757	67	15048	112	88100	37
30	22277		22211	9	44705	66	17306	112	88000	38
40	26672	94	11803	8	76392235	65	19560	112	87900	39
50	31066	95	01391	7	75575	64	21813	112	87800	40
59 0	35461	95	86190991	6	66405	63	24072	112	87700	41
10	39855	94	80587	5	54248	62	26341	112	87600	42
20	44250	95	70184	4	41581	61	28611	112	87500	43
30	48644	94	59782	3	28912	60	30880	112	87400	44
40	53038		49381	2	16261	59	33150	112	87300	45
50	57432		38981	1	0360	58	35420	112	87200	46
60	61826		28581	0	10041	57	37690	112	87100	47

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W. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D. Sinus.	D.
0	61116	86118536	76390945	56	90630779	60
1	65220	94 18190	78289	56	28730	49 30
2	70614	93 07795	65633	55	26680	50 40
3	75007	94 36097401	52978	54	24631	49 30
4	79401	93 87009	40324	53	22581	50 20
5	83794	94 76618	27671	52	20531	51 10
6	88188	93 66219	15015	50	18481	50 59
7	92581	94 55841	02365	49	16431	51 50
8	96974	93 45454	76189719	47	14380	50 40
9	101367	94 35068	77070	45	12330	51 30
10	05760	93 24684	64423	43	10279	52 20
11	10153	94 14301	51776	41	08228	51 10
12	14546	93 03920	39131	39	06178	52 058
13	18939	94 85993540	26486	37	04123	51 50
14	23331	93 83161	13843	35	02073	52 40
15	27724	94 72783	01200	33	00021	53 30
16	32116	93 62407	76088559	31	90597969	54 20
17	36508	94 52032	75919	29	95916	53 10
18	40900	93 41658	63279	27	93864	52 057
19	45292	94 31285	50640	25	91811	53 50
20	49684	93 20914	38002	23	89758	54 40
21	54076	94 10544	25366	21	87705	55 30
22	58468	93 00176	12731	19	85651	54 20
23	62860	94 85889809	00097	17	83597	55 10
24	67251	93 79443	75987464	15	81543	56 056
25	71643	94 69078	74831	13	79489	57 50
26	76034	93 58714	62199	11	77435	58 40
27	80425	94 48352	49569	9	75380	59 30
28	84817	93 37992	36940	7	73326	60 20
29	89208	94 27633	24313	5	71271	61 10
30	93595	93 17275	11686	3	69216	62 055
31	97989	94 06918	75899059	1	67160	63 50
32	102380	93 85796562	86434	25	65105	64 40
33	06771	94 86208	73810	23	63049	65 30
34	11161	93 75855	61187	21	60993	66 20
35	15552	94 65504	48566	19	58936	67 10
36	19943	93 55154	35945	17	56880	68 054

Grad. 64.

18 M.

Grad. 25.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6	0 42419942	90	85755154	10	75835945	1260	9910000	71	2010000	10
10	24332	90	44805	10	23325	1260	21480	71	5437	10
20	25723	91	34457	10	10705	1260	21792	71	1274	10
30	33113	100	24110	45	75798087	17	24022	71	5052	10
40	37503	100	13765	43	85470	15	25091	71	4463	10
50	41893	89	03422	42	72855	15	3036	71	4052	10
7	0 46282	90	85693080	41	60240	13	25840	71	4471	10
10	50672	90	82739	40	47527	13	31112	71	4061	10
20	55062	89	72399	39	35014	12	37311	71	4052	10
30	59451	90	62060	37	22402	11	39655	74	4052	10
40	63841	89	51713	36	09791	10	41930	74	4052	10
50	68230	88	41387	34	75697182	09	44201	75	4052	10
8	0 72619	88	31053	33	84572	07	46481	74	4052	10
10	77008	88	20720	32	71965	07	48755	74	4052	10
20	81397	88	10388	31	59358	06	51030	74	4052	10
30	85786	88	00057	29	46752	04	53301	74	4052	10
40	90175	88	85589728	28	34148	04	55580	76	4052	10
50	94563	88	79400	27	21544	03	57856	76	4052	10
9	0 98952	88	69073	25	08941	01	60132	77	4052	10
10	42503340	89	58748	24	75596340	01	62402	77	4052	10
20	07729	88	48424	23	83739	12590	64685	76	4052	10
30	12117	88	38101	22	71140	12590	66961	77	4052	10
40	16505	88	27771	20	58541	12590	69238	77	4052	10
50	20893	88	17439	19	45944	12590	71515	78	4052	10
10	0 25281	87	07140	18	33147	12590	73793	78	4052	10
10	29669	87	85496822	17	20751	12590	76071	79	4052	10
20	34057	87	86505	15	08155	12590	78350	79	4052	10
30	38445	87	76190	13	75495160	12590	80628	79	4052	10
40	42832	88	65277	12	82070	12590	82907	80	4052	10
50	47220	87	55565	11	70278	12590	85186	80	4052	10
11	0 51607	87	45254	10	57284	12590	87465	80	4052	10
10	55994	87	34944	09	45195	12590	89744	81	4052	10
20	60381	86	24635	07	32611	12590	92023	81	4052	10
30	64769	86	14328	06	20024	12590	94302	82	4052	10
40	69156	86	04021	04	07437	12590	96581	82	4052	10
50	73543	86	8551315	03	7579485	12590	98860	83	4052	10
60	77929	86	31415	01	52155	12590	101139	83	4052	10

Grad. 64.

Grad. 25.

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D. Sinus.	D.
12 0	42577929	87	85383435	10001147	90481705	60
10	81316	86	73113	03439	80641	64
20	86702	87	62812	05710	78576	65
30	91089	86	52511	07992	76512	64
40	95475	87	42214	10274	74447	65
50	99862	87	31917	12557	72381	66
60	42604248	86	21622	14840	70316	65
70	08634	85	11322	17123	68250	64
80	13030	86	01035	19407	66185	65
90	17466	85	81290743	21690	64119	66
100	21791	86	80452	23974	62052	67
110	26177	85	70163	26256	59986	66
120	30563	86	59875	28543	57914	65
130	34942	85	49588	30828	55852	64
140	39334	86	39301	33114	53785	65
150	43719	85	28018	35399	51718	66
160	48104	86	18734	37683	49650	67
170	52489	85	08455	39971	47583	68
180	56874	86	85198475	42257	45515	69
190	61259	85	87897	44544	43446	68
200	65644	86	77610	46831	41378	69
210	70028	85	67344	49118	39309	68
220	74413	86	57069	51406	37241	69
230	78797	85	46795	53693	35171	70
240	83182	86	36522	55981	33102	69
250	87566	85	26250	58270	31033	70
260	91950	86	15980	60558	28963	69
270	96334	85	05711	62847	26893	68
280	42700718	86	85095444	65136	24823	69
290	05102	85	85178	67426	22753	70
300	09486	86	74913	69716	20682	71
310	13870	85	64649	72006	18612	70
320	18253	86	54386	74297	16541	71
330	22637	85	44125	76587	14470	72
340	27020	86	33864	78878	12398	71
350	31403	85	23608	81169	10327	72
360	35786	86	13351	83461	08255	71

Grad. 64.

S.M.

Grad. 25.

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S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinu.	D.
80	42735786		85013351		74929890		10083461		90408231	
10	43169	4383	03095	10156	17343	47	85752	91	06161	72
20	44551		84992840		04796		88044	92	04111	73
30	48935		82587	52	74892251	45	90336		02012	74
40	53318		72335	50	79706	43	92629	93	90399966	75
50	57701		62085	49	67163		94922	1294	97251	76
60	61083	82	51836	48	54620	42	97216	4294	95240	77
70	66466	83	41588	47	42078	41	99510		93747	78
80	70848	81	31341	46	29537	40	10101804		91633	79
90	75230		21095	44	16997	39	04098		89554	80
100	79612		10851	42	04458		06393	95	87537	81
110	83994		00609	41	74791922	15336	08687	24	85421	82
120	88376		84890362	40	79186	34	10982	95	83305	83
130	92758		80128	39	66850		13278	96	81189	84
140	97140		69880	38	54316		15573	95	79073	85
150	101521	81	59651	36	41782	32	17869	96	76957	86
160	105903	82	49415	35	29250	31	20165		74841	87
170	10285		39180	34	16719		22461	97	72725	88
180	14666	81	28946	33	04188	30	24758		70609	89
190	19047		18713	31	74691658	29	27055	98	68493	90
200	23429	82	08482	30	79129	27	29353	97	66377	91
210	27810	81	84798252	28	66602	26	31650	98	64261	92
220	32191		88024	27	54076	25	33948		62145	93
230	36572	80	77797	26	41551	24	36246	99	60029	94
240	40952	81	67570	24	29027	23	38544		57913	95
250	45333		57347	23	16504	22	40843		55797	96
260	49713	80	47124	22	03582		43142	100	53681	97
270	54094	81	36902	21	74591400	20	45440		51565	98
280	58474		26678	20	78040	19	47741		49449	99
290	62854	81	16461	19	60470		50041		47333	100
300	67235	80	26242	17	53901	18	52342		45217	
310	71615		84900215	16	47384	17	54643		43101	
320	75995	79	85800	15	28867	16	56942		40985	
330	80375		75594	14	16351	15	59243		38869	
340	84754	78	65381	12	05837	14	61544		36753	
350	89134		55169	11	7442325	13	63846		34637	
360	93514	77	44957		78270	12	66148		32521	

Grad. 54.

Grad. 25.

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	Min.	D. Logarith.	D. Different.	D. Logarith.	D.	Sinus.	D.
1	144513	54844958	74478810	10166148	03	90333529	60
2	144523	34748	66297	08451	01	31450	79
3	144533	24539	83786	70753	01	19370	80
4	144543	14332	41276	73050	02	17190	30
5	144553	04127	18768	75339	02	15109	20
6	144563	8459121	16161	77624	02	13119	80
7	144573	83720	03754	79906	04	11048	0
8	144583	73113	7439124	82175	04	1896-	035
9	144593	62317	78742	84475	04	16886	50
10	144603	51117	66138	86879	06	14805	30
11	144613	40910	53735	89184	06	12713	20
12	144623	30723	41224	91459	06	10642	81
13	144633	20527	28710	93794	08	08560	034
14	144643	10310	16211	96100	08	06477	50
15	144653	00141	03711	98406	09	04377	40
16	144663	8991847	7829121	10120012	09	02132	30
17	144673	81711	76722	05018	11	00229	20
18	144683	71570	66247	01325	11	0228128	10
19	144693	61380	53750	07632	03	90063	033
20	144703	51106	41256	09940	03	87960	50
21	144713	40713	28764	12247	04	85876	40
22	144723	30287	16270	14551	05	83811	30
23	144733	20044	03781	16865	05	81715	20
24	144743	10402	019100	19182	06	79644	10
25	144753	00211	76720	21491	06	77550	85
26	144763	899106	66711	23790	07	75473	032
27	144773	79924	56714	26090	07	73400	50
28	144783	69747	46711	28390	08	71350	40
29	144793	59570	36711	30690	08	69319	30
30	144803	49386	26700	32987	09	67313	20
31	144813	39181	16681	35280	09	65323	10
32	144823	28954	06654	37570	10	63340	031
33	144833	18717	96621	39850	10	61374	50
34	144843	08460	86584	42130	11	59423	40
35	144853	98193	76547	44400	11	57487	30
36	144863	87916	66500	46670	12	55566	20
37	144873	77629	56453	48930	12	53660	10
38	144883	67332	46406	51190	13	51769	030
39	144893	57025	36359	53440	13	49894	50
40	144903	46708	26312	55690	14	48035	40
41	144913	36381	16265	57930	14	46192	30
42	144923	26044	06218	60170	15	44365	20
43	144933	15697	96171	62410	15	42554	10
44	144943	05350	86124	64650	16	40769	030
45	144953	95003	76077	66890	16	38990	50
46	144963	84656	66030	69130	17	37227	40
47	144973	74309	55983	71370	17	35480	30
48	144983	63962	45936	73610	18	33749	20
49	144993	53615	35889	75850	18	32034	10
50	145003	43268	25842	78090	19	30335	030

Grad. 64.

S.M.

Kk

Grad. 15

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M. S.	Sine	Co. Tangent	Co. Secant	Tangent	Secant
30	4305110	128137	610013	1000000	1000000
10	58483	62054	18524	5872	1000000
20	59891	57594	64215	5541	1000000
30	64447	57731	1321554	68160	1000000
40	68612	52174	20310	73481	1000000
50	74938	37412	1501	80111	1000000
60	82111	17614	3111	88111	1000000
70	89111	67081	4111	96111	1000000
80	94111	21034	5111	1000000	1000000
90	98111	1111	6111	1000000	1000000
100	1000000	1111	7111	1000000	1000000
110	1000000	1111	8111	1000000	1000000
120	1000000	1111	9111	1000000	1000000
130	1000000	1111	1000000	1000000	1000000
140	1000000	1111	1000000	1000000	1000000
150	1000000	1111	1000000	1000000	1000000
160	1000000	1111	1000000	1000000	1000000
170	1000000	1111	1000000	1000000	1000000
180	1000000	1111	1000000	1000000	1000000
190	1000000	1111	1000000	1000000	1000000
200	1000000	1111	1000000	1000000	1000000
210	1000000	1111	1000000	1000000	1000000
220	1000000	1111	1000000	1000000	1000000
230	1000000	1111	1000000	1000000	1000000
240	1000000	1111	1000000	1000000	1000000
250	1000000	1111	1000000	1000000	1000000
260	1000000	1111	1000000	1000000	1000000
270	1000000	1111	1000000	1000000	1000000
280	1000000	1111	1000000	1000000	1000000
290	1000000	1111	1000000	1000000	1000000
300	1000000	1111	1000000	1000000	1000000
310	1000000	1111	1000000	1000000	1000000
320	1000000	1111	1000000	1000000	1000000
330	1000000	1111	1000000	1000000	1000000
340	1000000	1111	1000000	1000000	1000000
350	1000000	1111	1000000	1000000	1000000
360	1000000	1111	1000000	1000000	1000000

Grad.

Time	D. Logarith.	2. Difference	D. Logarith.	D. Sinus	2.
1000	8501314	7113478	1023164	7113478	85
1010	85023	4203	102461	7113478	86
1020	8504280	10354	10261	7113478	87
1030	85077	43155	10281	76967	88
1040	74018	10317	10301	74877	89
1050	85101	10410	44243	72776	90
1100	85141	0584	46587	70689	91
1110	4218	7145300	48931	68584	92
1120	31010	80975	51275	66487	93
1130	00108	68541	53619	64390	94
1140	3125	10105	55963	62293	95
1150	01291	41677	58307	60196	96
1200	1178188	51044	60651	58100	97
1210	2108	10348	62995	56003	98
1220	5133	00588	65339	53906	99
1230	11685	410254	67683	51809	00
1240	5111	54717	69927	49712	01
1250	4101	1011	72271	47615	02
1300	3111	5004	74615	45518	03
1310	14065	4004	76959	43421	04
1320	5004	1011	79303	41324	05
1330	00000	1011	81647	39227	06
1340	50000	00000	83991	37130	07
1350	00000	00000	86335	35033	08
1400	00000	00000	88679	32936	09
1410	00000	00000	91023	30839	10
1420	00000	00000	93367	28742	11
1430	00000	00000	95711	26645	12
1440	00000	00000	98055	24548	13
1450	00000	00000	10049	22451	14
1500	00000	00000	10049	20354	15
1510	00000	00000	10049	18257	16
1520	00000	00000	10049	16160	17
1530	00000	00000	10049	14063	18
1540	00000	00000	10049	11966	19
1550	00000	00000	10049	9869	20
1600	00000	00000	10049	7772	21
1610	00000	00000	10049	5675	22
1620	00000	00000	10049	3578	23
1630	00000	00000	10049	1481	24
1640	00000	00000	10049	0000	25
1650	00000	00000	10049	0000	26
1700	00000	00000	10049	0000	27
1710	00000	00000	10049	0000	28
1720	00000	00000	10049	0000	29
1730	00000	00000	10049	0000	30
1740	00000	00000	10049	0000	31
1750	00000	00000	10049	0000	32
1800	00000	00000	10049	0000	33
1810	00000	00000	10049	0000	34
1820	00000	00000	10049	0000	35
1830	00000	00000	10049	0000	36
1840	00000	00000	10049	0000	37
1850	00000	00000	10049	0000	38
1900	00000	00000	10049	0000	39
1910	00000	00000	10049	0000	40
1920	00000	00000	10049	0000	41
1930	00000	00000	10049	0000	42
1940	00000	00000	10049	0000	43
1950	00000	00000	10049	0000	44

Grad. 25.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	
42	0	43365908	69	83549017	1007	512201	07	20412419	12	012419
10		702177	61	335120	1007	80720	07	18730	13	018730
20		74745	61	29112	1007	08391	07	21121	13	021121
30		79014	61	19441	1007	73085984	07	21475	13	021475
40		83381	61	09372	1007	87185	07	21528	13	021528
50		87750	61	3409304	1007	10180	07	21714	13	021714
60		92119	61	89119	1007	15779	07	21859	13	021859
70		96488	61	79179	1007	40379	07	21994	13	021994
80		100857	61	69179	1007	23979	07	22130	13	022130
90		105226	61	59046	1007	51221	07	22265	13	022265
100		109595	61	48914	1007	40179	07	22401	13	022401
110		113964	61	38781	1007	29079	07	22537	13	022537
120		118333	61	28648	1007	17979	07	22673	13	022673
130		122702	61	18515	1007	71790	07	22809	13	022809
140		127071	61	84382	1007	60740	07	22945	13	022945
150		131440	61	74249	1007	49690	07	23081	13	023081
160		135809	61	64116	1007	38640	07	23217	13	023217
170		140178	61	53983	1007	27590	07	23353	13	023353
180		144547	61	43850	1007	16540	07	23489	13	023489
190		148916	61	33717	1007	54250	07	23625	13	023625
200		153285	61	23584	1007	43200	07	23761	13	023761
210		157654	61	13451	1007	32150	07	23897	13	023897
220		162023	61	3218	1007	21100	07	24033	13	024033
230		166392	61	879	1007	10050	07	24169	13	024169
240		170761	61	10053	1007	12897644	07	24305	13	024305
250		175130	61	5542	1007	85250	07	24441	13	024441
260		179499	61	48214	1007	71000	07	24577	13	024577
270		183868	61	38181	1007	50450	07	24713	13	024713
280		188237	61	28048	1007	39400	07	24849	13	024849
290		192606	61	17915	1007	28350	07	24985	13	024985
300		196975	61	7812	1007	17300	07	25121	13	025121
310		201344	61	17912	1007	6345	07	25257	13	025257
320		205713	61	7812	1007	8900	07	25393	13	025393
330		210082	61	28048	1007	78050	07	25529	13	025529
340		214451	61	17915	1007	67000	07	25665	13	025665
350		218820	61	7812	1007	55950	07	25801	13	025801
360		223189	61	28048	1007	44900	07	25937	13	025937
370		227558	61	17915	1007	33850	07	26073	13	026073
380		231927	61	7812	1007	22800	07	26209	13	026209
390		236296	61	28048	1007	11750	07	26345	13	026345
400		240665	61	17915	1007	6345	07	26481	13	026481
410		245034	61	7812	1007	8900	07	26617	13	026617
420		249403	61	28048	1007	78050	07	26753	13	026753
430		253772	61	17915	1007	67000	07	26889	13	026889
440		258141	61	7812	1007	55950	07	27025	13	027025
450		262510	61	28048	1007	44900	07	27161	13	027161
460		266879	61	17915	1007	33850	07	27297	13	027297
470		271248	61	7812	1007	22800	07	27433	13	027433
480		275617	61	28048	1007	11750	07	27569	13	027569
490		279986	61	17915	1007	6345	07	27705	13	027705
500		284355	61	7812	1007	8900	07	27841	13	027841

Grad. 25.

Grad. 35.

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Time.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Time.	D.
1000000		83187813		72685574	72	10500639	42	90031277	10
1000000		77784		74101	71	02982	44	29767	10
1000000		67757		62633	70	05326		27657	10
1000000		57731		50001	69	07670		25546	10
1000000		47707		37692	68	10015		23435	10
1000000		37684		25724		12360		21324	10
1000000		27662		13910		14706		19213	011
1000000		17641		00540		17051		17102	50
1000000		07621		72588224		19397		14990	12
1000000		83097601		71859	65	21743		12878	30
1000000		87525		63495	64	24090		10766	20
1000000		77430		51421	62	26437		08654	10
1000000		67318		38775	61	28784		06541	13
1000000		57243		26411		31132		04428	50
1000000		47115		14051		33439		02315	40
1000000		37040		01081		35827		00202	30
1000000		27010		72489735		38175		89998089	20
1000000		17001		76978		40523		95976	10
1000000		07493		64612	56	42872		93302	14
1000000		81997481		52267	55	45221		91746	10
1000000		87481		39912		47571		89618	40
1000000		77479		27554	53	49920		87510	15
1000000		67477		15407	52	52270		85405	14
1000000		57476		04850	51	54620		83290	15
1000000		47475		72390506		56971		81175	10
1000000		37474		78157		59323		79080	50
1000000		27473		65200		61673		76944	16
1000000		17472		52461	46	64023		74823	10
1000000		07471		41315		66374		72722	10
1000000		818747		28769		68725		70596	10
1000000		87264		15424		71076		68480	10
1000000		87263		04080		73427		66364	50
1000000		87262		72101735		75778		64247	17
1000000		87261		78136		78129		62110	10
1000000		87260		67874		80480		60010	20
1000000		87259		56713		82831		57881	10
1000000		87258		45552		85182		55752	10

Grad. 64.

S.M.

Grad. 25.

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M. S.	Sine.	D.	Logarith.	Diff.	M. S.	Sine.	D.
54	0.8121	10	8121	10	54	0.8121	10
10	8130	10	8130	10	10	8130	10
20	8140	10	8140	10	20	8140	10
30	8150	10	8150	10	30	8150	10
40	8160	10	8160	10	40	8160	10
50	8170	10	8170	10	50	8170	10
60	8180	10	8180	10	60	8180	10
70	8190	10	8190	10	70	8190	10
80	8200	10	8200	10	80	8200	10
90	8210	10	8210	10	90	8210	10
100	8220	10	8220	10	100	8220	10
110	8230	10	8230	10	110	8230	10
120	8240	10	8240	10	120	8240	10
130	8250	10	8250	10	130	8250	10
140	8260	10	8260	10	140	8260	10
150	8270	10	8270	10	150	8270	10
160	8280	10	8280	10	160	8280	10
170	8290	10	8290	10	170	8290	10
180	8300	10	8300	10	180	8300	10
190	8310	10	8310	10	190	8310	10
200	8320	10	8320	10	200	8320	10
210	8330	10	8330	10	210	8330	10
220	8340	10	8340	10	220	8340	10
230	8350	10	8350	10	230	8350	10
240	8360	10	8360	10	240	8360	10
250	8370	10	8370	10	250	8370	10
260	8380	10	8380	10	260	8380	10
270	8390	10	8390	10	270	8390	10
280	8400	10	8400	10	280	8400	10
290	8410	10	8410	10	290	8410	10
300	8420	10	8420	10	300	8420	10
310	8430	10	8430	10	310	8430	10
320	8440	10	8440	10	320	8440	10
330	8450	10	8450	10	330	8450	10
340	8460	10	8460	10	340	8460	10
350	8470	10	8470	10	350	8470	10
360	8480	10	8480	10	360	8480	10
370	8490	10	8490	10	370	8490	10
380	8500	10	8500	10	380	8500	10
390	8510	10	8510	10	390	8510	10
400	8520	10	8520	10	400	8520	10
410	8530	10	8530	10	410	8530	10
420	8540	10	8540	10	420	8540	10
430	8550	10	8550	10	430	8550	10
440	8560	10	8560	10	440	8560	10
450	8570	10	8570	10	450	8570	10
460	8580	10	8580	10	460	8580	10
470	8590	10	8590	10	470	8590	10
480	8600	10	8600	10	480	8600	10
490	8610	10	8610	10	490	8610	10
500	8620	10	8620	10	500	8620	10

	D. Logarithm	D. Different.	D. Logarithm	D. Sinus.	D.
100000	1000000	1000000	1000000	30879405	60
100001	1000001	1000001	1000001	77279	26
100002	1000002	1000002	1000002	75154	25
100003	1000003	1000003	1000003	73021	11
100004	1000004	1000004	1000004	70902	10
100005	1000005	1000005	1000005	68776	10
100006	1000006	1000006	1000006	66655	059
100007	1000007	1000007	1000007	64522	50
100008	1000008	1000008	1000008	62396	26
100009	1000009	1000009	1000009	60275	17
100010	1000010	1000010	1000010	58151	10
100011	1000011	1000011	1000011	56024	10
100012	1000012	1000012	1000012	53894	058
100013	1000013	1000013	1000013	51761	50
100014	1000014	1000014	1000014	49625	20
100015	1000015	1000015	1000015	47486	10
100016	1000016	1000016	1000016	45343	050
100017	1000017	1000017	1000017	43196	50
100018	1000018	1000018	1000018	41045	10
100019	1000019	1000019	1000019	38890	10
100020	1000020	1000020	1000020	36731	050
100021	1000021	1000021	1000021	34568	50
100022	1000022	1000022	1000022	32401	10
100023	1000023	1000023	1000023	30230	10
100024	1000024	1000024	1000024	28055	050
100025	1000025	1000025	1000025	25876	50
100026	1000026	1000026	1000026	23692	10
100027	1000027	1000027	1000027	21504	10
100028	1000028	1000028	1000028	19311	050
100029	1000029	1000029	1000029	17114	50
100030	1000030	1000030	1000030	14913	10
100031	1000031	1000031	1000031	12708	10
100032	1000032	1000032	1000032	10499	050
100033	1000033	1000033	1000033	8285	50
100034	1000034	1000034	1000034	6066	10
100035	1000035	1000035	1000035	3842	10
100036	1000036	1000036	1000036	1613	050
100037	1000037	1000037	1000037	689	50
100038	1000038	1000038	1000038	566	10
100039	1000039	1000039	1000039	442	10
100040	1000040	1000040	1000040	318	050
100041	1000041	1000041	1000041	193	50
100042	1000042	1000042	1000042	68	10
100043	1000043	1000043	1000043	37	10
100044	1000044	1000044	1000044	6	050
100045	1000045	1000045	1000045	0	50
100046	1000046	1000046	1000046	0	10
100047	1000047	1000047	1000047	0	050
100048	1000048	1000048	1000048	0	50
100049	1000049	1000049	1000049	0	10
100050	1000050	1000050	1000050	0	050

M. S.	Sinus.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus.
6	0 4397917		8:111883		7125633		10711442		8421111
10	95371	54	01988		44162		87825		8421111
20	4400024	11	8:092094		31891		50181		8421111
30	86977	54	82201	93	19674	68	45577		8421111
40	11631	53	72307	92	07358	67	84951		8421111
50	15654	54	62418	91	71295089		67129		8421111
7	10038		5252	90	81822	66	68703		8421111
10	24591		42639	89	70556	65	74051		8421111
20	5844		32752	87	57287	64	78861		8421111
30	33097	52	72864	86	46028	63	74888		8421111
40	3249	52	198	84	35766	62	79216		8421111
50	41802		07095	82	21501	61	81894		8421111
8	46155		8193217	81	03145		85972		8421111
10	50507	52	83316	80	7196985		80351		8421111
20	15899	53	73816	79	56720	60	82770		8421111
30	50272	52	63577	77	3246	59	91380		8421111
40	52704		53550	76	80713	58	91489		8421111
50	67915		41854	75	47071	57	91850		8421111
9	72268		33949	73	31700	56	95149		8421111
10	76620		24075	74	23441	55	10800630		8421111
20	80972		14202	73	11192	54	03010		8421111
30	81323	54	04330	71	7198849		01297		8421111
40	85078	53	2189460	70	58635	53	07790		8421111
50	90578	52	51592	69	74319	52	10184		8421111
10	95577		11705	67	07139	51	13590		8421111
20	14978749	52	04254	66	49970	50	14919		8421111
30	10701	51	72794	65	37251	49	13301		8421111
40	11401		85007	63	28640	48	17953		8421111
50	17782		5178	62	13201	47	21007		8421111
10	18524		2780	61	00301	46	28570		8421111
20	24055	50	19523	60	7082311	45	16890		8421111
30	28806	49	10781	59	70835	44	27014		8421111
40	33134	50	8795823	58	64743	43	30123		8421111
50	37124	49	91971	57	57084	42	31132		8421111
10	41837	48	76008	56	49223	41	37070		8421111
20	46202		6011	55	40798	40	40777		8421111
30	51121		10403	54	31900	39	43101		8421111

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
0	44150585	410	81756408	51	70915166	38	10841141	86	89725837	41	60
10	54935		46556	51	03028	38	43528		23696	41	50
10	59185		36705	51	70890791	37	45914		21556	40	40
				50						41	30
30	63635		26855	48	78554	34	48301	87	19415	42	20
40	67985	49	17007	47	46320	34	50687	86	17273	41	10
50	72334	50	07160	46	54086	33	53074	87	15132	2142	047
		49	81697314	45	41853		55461	88	12990	50	40
10	76684		87469	44	29620	31	57849	87	10848	40	30
10	81033		77625	43	17389		60236	88	08706	40	20
20	85382			41	05158	29	62624		06564	40	10
30	89731		67782	40	70792925	27	65012	89	04422	43	0
40	94080		57941	38	80700		67401		02279	40	0
50	98429		48101	36		17		90	00136	40	0
				36	68473		69790	89	89697993	50	40
10	44202778	48	38263	37	56246	1215	72180		95850	44	30
10	07127		28426	36	44021		74569	90		40	20
10	11476		18590	35				91	93706	40	10
				35	37796		76959		91562	40	0
10	15824		08755	34	19571	24	79349	91	89418	40	0
20	20172	49	81598930	32	07347	23	81739			40	0
30	24521	48	89086	31	70695124	22	84130	92	87274	45	50
				30	82902	21	86521		85130	40	0
10	28869		79254	29	70680	20	88913	91	82985	40	0
10	33217		69423	27	58460	19	91304	92	80840	40	0
10	37565		59593	26	46241	18	93696		78695	40	0
				24	34023	16	96088		76550	46	0
30	41913	47	49764	23	21807		98480	93	74404	45	0
40	46246	48	39937	22	09591	15	10900873		72259	46	0
50	50608		30111	21	70597376	13	03266	94	70113	40	0
				20	85161		05660		67967	40	0
10	54956		20287	19	72948	13	08053	93	65821	40	0
10	59304	47	10464	18	60735	12	10447	94	63674	47	0
10	63651		00642	17	48523	11	12841		61528	46	0
				16	36311	10	15236	95	59381	47	0
30	67998		81490821	14	24101	9	17630	94	57234	46	0
40	72345		81001	13	11892	8	20025	95	55086	48	30
50	76692		71182	12	70499685	7	22420	96	52939	47	0
				11	87478		24816		50792	48	0
10	81039		61364	10	75272	6	27211		48643	40	0
10	85386		51547	9						40	0
10	89733		41731	8						40	0
				7						40	0
30	94080	46	32917	6						40	0
40	98426	47	22105	5						40	0
50	44302773	46	12294	4						40	0
60	07119		02484	3						40	0

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S.M.

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S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
8	44307119	4146	81402484	9809	70475272	06	10917212	97	89648655	60
10	11465		81392673	06	63066		29609	96	46495	48
20	15811	4146	82868	06	50863	12103	31005		44346	49
30	20157		73062	05	38660	12103	34401	98	41198	30
40	24503		63257	04	26458		36799	97	40049	20
50	28349		53453	03	14257	01	39196	98	37900	10
19	33195		43650	01	02056		41594		35751	00
10	37541		33849	00	70329857	12109	43992	99	33601	50
20	41886	45	24049	00	77358		46391	98	31451	40
30	46231	46	14250	9799	65461		48789	99	29302	30
40	50577	45	04452	97	53264		51288		27252	20
50	54922	45	81294653	96	41068	96	53587		25002	10
20	59267		84859	94	28873	95	55986	00	22852	00
10	63612		75065	93	16679	94	58386	01	20700	50
20	67957		65272	92	04481	93	60786	02	18548	40
30	72302	44	55480	91	70292293	91	63187	01	16398	30
40	76646	45	45689	90	80102		65587	00	14247	20
50	80991	44	35899	89	67951	90	67988	01	12095	10
21	85335	45	26110	87	55721	89	70387	02	09944	00
10	89680	44	16223	86	43532	88	72791		07793	50
20	94024		06537	85	31344	87	75193		05640	40
30	98368		81896752	84	19157	86	77595		03487	30
40	44402712		86968	83	06971	85	79997	03	01335	20
50	07056		77185	82	70194785		82400		89199182	10
12	11400		67403	80	82600	85	84803	04	97050	00
10	15744	43	57623	79	70416	84	87207	03	94877	50
20	20087	44	47844	78	58224	83	89610	04	92722	40
30	24431	43	38066	77	46052		92014		90568	30
40	28774	44	28289	76	33871	81	94418		88418	20
50	33118	43	18513	75	21691	80	96821	05	86260	10
23	37461		08738	74	09511	79	99217		84106	00
10	41804		81098964	73	70097332	78	11001632	06	81952	50
20	46147		89191	72	85153		04058	05	79797	40
30	50490	41	79420	69	72977	76	06443	06	77642	30
40	54833	43	69651	68	60808	75	08849		75487	20
50	59175		59883	67	48628	74	11255	07	73331	10
60	63518		50116		36454		13662	08	71176	00

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J. M.

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Alt. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
24 °	44463518	42	81050116	66	70036454	110	33661	06	89571176	116	60
10	67860	43	40350	65	14181	111	16061	07	69020	116	50
10	71203	43	30585	64	11110	111	18475	07	66864	116	40
30	76545	43	20821	63	69999939	111	20881	08	64708	116	30
40	80887	43	11058	61	87768	111	23190	08	62552	116	20
50	85229	43	01297	60	75590	69	25698	09	60395	57	10
25 °	89571	41	80991537	59	63430	67	28107	08	58238	035	
10	93913	41	81778	58	51263	67	30515	08	56081	50	
10	98255	41	74010	57	39096	66	32924	09	53924	40	
30	44501596	41	61263	55	26930	64	35333	10	51767	30	
40	06938	41	52508	54	14766	64	37742	10	49609	20	
50	11279	42	42754	52	02602	63	40151	11	47451	10	
26 °	15621	41	33002	50	69890435	61	42562	10	45293	034	
10	19961	41	23251	50	78278	61	44973	11	43135	50	
30	24303	41	13501	48	66117	60	47384	11	40976	40	
30	28644	40	03752	47	53957	59	49793	12	38818	30	
40	32985	40	80894003	47	41797	58	52200	12	36659	20	
50	37326	40	84256	46	29638	57	54618	11	34500	10	
27 °	41667	40	74510	44	17481	56	57029	12	32340	033	
10	46007	41	64766	43	05325	56	59441	13	30181	50	
20	50348	40	55023	42	69793169	54	61854	13	28021	40	
30	54688	40	45281	40	81015	53	64266	13	25861	30	
40	59028	40	35535	39	68860	52	66679	14	23701	20	
50	63369	40	25799	38	56707	51	69091	14	21540	10	
28 °	67709	39	16060	37	44554	50	71506	15	19380	032	
10	72049	39	06323	36	32404	49	73919	15	17219	50	
20	76388	40	80796587	35	20254	48	76335	16	15058	40	
30	80728	39	86851	34	08105	47	78747	16	12897	30	
40	85068	39	77118	33	69695456	46	81162	17	10735	20	
50	89407	40	67385	32	83808	45	83577	17	08574	10	
29 °	93747	39	57653	31	71660	44	85993	18	06412	031	
10	98086	39	47921	30	59513	43	88409	18	04250	50	
20	44602425	40	38192	28	47367	42	90825	19	02087	40	
30	06765	39	28464	26	35223	41	93241	19	8949925	30	
40	11104	38	18738	25	23080	40	95658	20	97762	20	
50	15443	39	09013	24	10939	39	98074	20	95529	10	
60	19781	39	80699289	24	69598798	38	11100491	21	93336	030	

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S.M

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D.	Sinus.	D.
30 0	44619781	80699289	69598798	11100491	18	89493436	63 60
10	24120	89566	86657	02909	18	91273	63 10
20	28459	79844	74518	05326	17	89109	64 40
30	32797	70123	62379	07744	16	86946	63 30
40	37136	60403	50241	10162	15	84782	64 20
50	41474	50684	38104	12580	14	82617	65 10
31 0	45812	40967	25968	14999	19	80453	65 029
10	50150	31251	13833	17418	10	78288	64 50
20	54488	21536	01698	19838	19	76124	64 40
30	58826	11822	69489565	22257	19	73959	65 30
40	63164	02109	77431	24677	10	71793	66 20
50	67501	80592398	65301	27097	21	69628	65 10
32 0	71839	82688	53170	29518	30	67462	66 029
10	76176	72979	41040	31939	12	65296	65 50
20	80514	63271	28910	34361	11	63130	66 40
30	84851	53564	16782	36782	12	60964	66 30
40	89188	43858	04654	39204	12	58798	67 20
50	93525	34154	69392528	41626	25	56631	67 10
33 0	97862	24451	80403	44048	23	54464	68 029
10	44702199	14749	68278	46471	12	52297	67 50
20	06536	05048	56155	48893	13	50130	68 40
30	10872	80495348	44032	51316	14	47962	68 30
40	15209	85649	31909	53740	14	45794	69 20
50	19545	75952	19788	56164	21	43628	69 10
34 0	23881	66256	07668	58588	20	41458	70 029
10	28218	56561	69295548	61013	14	39290	69 50
20	32554	46867	83430	63437	18	37121	70 40
30	36890	37174	71312	65861	16	34952	70 30
40	41226	27483	59196	68287	26	32783	71 20
50	45561	17793	47080	70713	13	30614	71 10
35 0	49897	08104	34965	73139	14	28444	72 029
10	54233	80398416	22851	75565	27	26271	71 50
20	58568	88729	10737	77992	26	24101	72 40
30	62903	79043	69198625	80418	27	21935	73 30
40	67239	69359	86514	82845	11	19765	73 20
50	71574	59676	74404	85272	10	17594	74 10
60	75909	49994	62194	87700	28	15424	74 029

Grad. 63.

S.M.

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M. S.	Sinns.	D.	Logarithb.	D.	Different.	D.	Logarithb.	D.	Sinus.	D.	
15	44775909	35	80349994	968	69162294	09	11187700	28	89415424	71	60
10	80244		40315		50185		90128	29	13253		50
10	84579		30633		38076		92557	28	11082		40
30	88913	34	10954	79	25969	07	94985		08910	72	30
40	93248	35	11277	77	13863	06	97414		06739	71	20
50	97582	34	01601	76	01758	05	99843		04567		10
37	44801917	35	80292926	75	69089654	1210	11201272	30	02395		023
10	06251	4334	82152	74	77550		04702		00223		50
20	10585	4	72579	73	65447		07131		89398051	73	40
30	14919		62907	72			09563	31	95878		30
40	19253		53337	70	53344	00	11993	30	93705		20
50	23587		43708	69	41244		14414	31	91532		10
38	27921		33900	68	17045	1209	16855	32	89359		022
10	32255		24233	67	04946		19287	31	87186	74	50
20	36588	33	14567	66	68992849		21718	32	85012		40
30	40923	33	04902	63	80752	95	24150		82838		30
40	45255		80195239	62	68657		26582	33	80664		20
50	49588		85577	61	56562		29015		78490		10
39	53921		75916	60	44468	94	31448	34	76315	75	021
10	58254		66256	59	32374	92	33882	33	74141	74	50
20	62587		56597	58	20282		36315	34	71966	75	40
30	66920		46959	56	08190	90	38749		69791	76	30
40	71253		37283	55	68896100	89	41183		67615	75	20
50	75586	32	27628	54	84011		43617	35	65440	76	10
40	79918		17974	53	71922	88	46052		63264		020
10	84250		08321	52	59834		48487	36	61088		50
20	88583	33	80098669	51	47746	86	50923	35	58912		40
30	92915	32	89018	49	35660	85	53358	36	56736		30
40	97247		79369	48	23575	84	55794		54559	77	20
50	14901579		69721	47	11491	83	58230		52382		10
41	05911		60074	46	68799408		60666	27	50205		019
10	10243	31	50428	45	87325	82	63103		48028		50
20	14574	32	40783	44	75243		65540	38	45851	78	40
30	18906	31	31139	42	63161	79	67978	37	43673		30
40	23237	32	21497	41	51082		70415	38	41495		20
50	27569	31	11856	39	39003	77	72853		39317		10
60	31900		02217		26926		75291		37139		018

Grad. 63.

S.M.

Grad. 26.

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M. S.	Sinus.	D.	Logarith.	D.	Differens.	D.	Logarith.	D.	Sinus.	D.
42 0	44981900		80001217		68726926		11275191		89337133	
10	36231		79992579	18	14249	77	77730	39	34960	
20	40562		82942	37	02774	1205	80168	38	32762	
30	44893		73306	963	68620699	22607		39	30601	
40	49224		63670	34	78624	85046		40	28412	
50	53554	30	54036	32	66550	87486			26244	
43 0	57885	31	44403	33	54477	73	89926		24009	
10	61216		34770		41403	74	92367	41	21855	
20	65546	30	25139	31	30332	71	94807	40	19701	
30	70876		15509	30	18161	69	97248		17521	
40	75206		05881	28	06192	68	99689		15345	
50	79536		79296254	17	68594124	1205	2130		13164	
44 0	83866		86628	16	82056	67	04572	42	10988	
10	88196		77003	23	69989		07014	43	08803	
20	92526		67379	14	57922		09457	42	06651	
30	96856		57756	13	45857	65	11899	41	04440	
40	100185	19	48135	21	33793	64	14342	43	02192	
50	05515	30	38515	20	21730	63	16785		00078	
45 0	09844	29	28896	19	09668	62	19228		89397894	
10	14173		19278	18	68497606		21672	44	95711	
20	18502		09661	17	85543	61	24116		91129	
30	22831		00045	16	73484		26561	45	91341	
40	27160		79790431	14	61426	58	29005	44	89164	
50	31489		80818	13	40368		31450	45	86421	
46 0	35818		71306	12	37311	57	33895		84738	
10	40147		61595	11	25254		36341	46	82612	
20	44475	18	51985	10	13199	55	38786	45	80431	
30	48803		42376	09	01244		41232	46	78241	
40	53132		32769	07	68389091	53	43678		76023	
50	57460	18	23163	06	77038		46125	47	73871	
47 0	61788		13558	05	64986	52	48572		71634	
10	66116		03254	04	55934		51020	48	69129	
20	70444		79694351	03	40884	50	53467	47	67344	
30	74771	27	84749	02	28834		55915	48	65139	
40	79099	28	75149	00	15786	48	58363		62989	
50	83427		65550	00	04719	49	60811		60761	
60	87754	17	55951	00	68292692		63260	49	58582	

Grad. 63.

Grad. 26.

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Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
41087754		79655951		68291692		11363166		89158582	60
91021	27	46395	9107	80646	+6	65709	49	56396	86
96409	18	36759		62600		68159	50	54110	40
45100736	4127	27184	95	36556	44	70608	49	52023	87
05063		17571	93	44513	43	75058	51	49837	86
09390		07979	91	31471	42	75508	50	47650	87
13716	26	79598388	90	10435	12041	77958	51	45463	88
18043		88798	89	08389		80409		43275	87
12370	16	79209	58	68196349		81850	51	41088	40
26696		69621	87	84369	38	85512	51	38900	30
31023	17	60034	85	72271	37	87763	51	36712	20
35349	16	50449	84	60234	36	90215		34524	10
39675		40865	83	48198		92667	53	32336	010
44001		31282	81	36161	34	95120	52	30147	50
48327		21700	81	24128		97572	63	27951	40
52653		12119	80	12094	33	1140025		25769	30
56979	25	02339	78	00061	32	01478	54	23558	20
61304	26	79472961	77	68082019	31	04932		21391	10
65630		83384	76	75992		07386	55	19201	09
69955	25	73808	75	63967	29	09841	54	17012	89
74150	16	64233	74	51938	28	11295	55	14822	90
78606	15	54659	73	39909	27	14750		12631	91
82931		45086	72	27881	26	17205	56	10441	90
87256	24	35514	70	23854	25	19660	57	08250	91
91521		25944	69	03228	24	22116		06059	08
95905	25	16375	68	91803	23	24572	57	03868	50
100130		06807	67	67979778	22	27029	56	01677	40
04555	14	79397240	66	67755		29485	57	89199486	30
08179		87674	65	55732	21	31942		97294	20
12003	15	78109	64	43710	20	34399	58	95102	10
17528	24	68545	63	31688		36857		92910	07
11852		58282	62	29667	19	39315	59	90718	93
16176		49420	61	07646	18	41774	58	88525	40
30500		39859	59	95627	17	44132	59	86332	30
34824	23	30300	57	67863609	16	46691		84139	20
39147	14	20743	56	71593	15	49150		81946	10
43474		11887		59578		51609		79733	06

Grad. 63.

S.M.

Grad. 26.

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S.	Sinus.	D.	Logarithm.	D.	Different.	D.	Logarithm.	D.	Sinus.	D.
0	4524371	33	79311187	55	67859578	15	11451609	60	89179751	20
10	47794	24	01632	54	47563	14	54069	60	77310	10
20	52118	4323	79292078	95	35549	14	56529	61	77160	0
30	56441		82525	95	33335	13	58990	61	7317	0
40	60764		72972	52	11522	11	61450	60	7007	0
50	65087		63420	50	67799509	11	63911	61	6877	0
5	69410		53870	49	87498	10	66372	462	6853	0
10	73733		44321	48	75487	10	68834	63	6439	0
20	78056		34773	47	63477	09	71296	63	6149	0
30	82379	21	25226	45	51468	08	73758	63	6000	0
40	86701	23	15681	44	39460	06	76221	63	5780	0
50	91024	21	06137	41	27454	05	78683	63	5581	0
6	95346		79196595	41	15449	1001	81146	64	5341	0
10	99668		87054	40	03444		83610	63	5180	0
20	45303990		77514	39	67691441		86073	64	4908	0
30	08312		67975	38	79438		88537	65	4687	0
40	12634		58436	37	67435		91001	66	4457	0
50	16956		48898	36	55432	02	93466	65	4257	0
7	21278	21	39361	34	43430	1099	95931	66	4057	0
10	25599	22	29815	33	31428		98397	67	3857	0
20	29921		20191	31	19429	94	11500862	68	3657	0
30	34242		10758	30	07430		03328	69	3457	0
40	38563	21	01227	29	67595432	95	05794	70	3257	0
50	42885	21	79091697	28	83437		08160	71	3057	0
6	47206	20	82168	27	71441		10727	72	2857	0
10	51527	21	72640	26	59446		13194	73	2657	0
20	55847		63113	25	47451		15662	74	2457	0
30	60168		53587	24	35455		18129	75	2257	0
40	64489	20	44061	23	23454		20597	76	2057	0
50	68809	11	34536	22	11470		23066	77	1857	0
6	73127	20	25013	21	67497478		25534	78	1657	0
10	77458		15492	20	87488		28003	79	1457	0
20	81778		05971	19	75480		30472	80	1257	0
30	86098		78940557	18	67481		32941	81	1057	0
40	90418		18953	17	55484		35410	82	0857	0
50	94738		77417	16	43487		37879	83	0657	0
6	99058		67907	15	31490		40348	84	0457	0

Grad. 27.

Grad. 27.

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M. S.	Sinu.	D. Logarith.	D. Different.	D. Logarith.	D.	Sinu.	D.
0	45399050	78967902	67427549	85	11540353	89100651	60
10	45403370	58388	15564	85	41824	89098451	50
20	07689	48875	03580	85	43295	96250	40
30	12009	39362	67391596	85	47766	94048	30
40	16328	29850	79612	82	50238	91847	20
50	20647	20339	67630	82	53709	89645	10
1	24966	10830	55649	81	55181	87443	059
10	29285	01312	43668	79	57654	85140	50
20	33604	78891815	31689	79	60126	83038	40
30	37923	82309	19710	77	62599	80835	30
40	42242	72805	07733	76	65072	78632	20
50	46560	63302	67295757	75	67545	76429	10
2	50879	53801	83782	73	70019	74225	058
10	55197	44300	71807	73	72493	72021	50
20	59516	34800	59832	73	74968	69818	40
30	63834	25301	47859	71	77442	67614	30
40	68152	15803	35886	71	79917	65409	20
50	72470	06307	23915	70	82391	63205	10
3	76788	78796812	11944	68	84868	61000	057
10	81105	87317	67199974	68	87343	58795	50
20	85423	77823	88004	67	89815	56590	40
30	89741	68331	76036	66	92295	54385	30
40	94058	58841	64069	64	94772	52180	20
50	98375	49352	52103	63	97249	49974	10
4	5502693	39864	40137	61	99727	47768	056
10	07010	30377	28173	61	11602204	45562	50
20	11327	20891	16209	60	04682	43355	40
30	15644	11406	04246	59	07160	41149	30
40	19960	01922	67092283	58	09639	38942	20
50	24277	78692440	80322	57	12118	36735	10
5	28594	82959	68362	56	14597	34528	055
10	32910	73478	56401	56	17077	32321	50
20	37226	63998	44442	55	19556	30113	40
30	41543	54520	32484	54	22036	27905	30
40	45859	45044	20518	53	24516	25697	20
50	50175	35569	08573	52	26996	23488	10
60	54491	26095	6996618	51	29477	21280	054

Grad. 62.

S. W.

M m

Grad. 27.

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D.	Sinus.	D.
0	45554491	16 78626095	74 66996618	55 11629477	81	89011280	60
10	38807	15 16621	73 84663	54 31953	81	19073	50
20	63122	16 07148	72 72708	53 34440	82	16863	40
30	67438	15 78597676	70 60755	52 36921	81	14654	30
40	71753	16 88206	68 48803	50 39403	81	12445	20
50	76069	16 78738	67 36853	49 41885	81	10235	10
60	80384	15 69271	66 24904	48 44367	83	08025	053
70	84699	15 59805	65 12955	48 46890	83	05815	50
80	89014	15 50340	64 01007	47 49333	84	03605	40
90	93329	14 40876	63 66889059	47 51817	83	01395	30
100	97644	14 31412	62 77112	46 54300	84	38999185	20
110	45601959	14 21950	61 65166	45 56784	84	96974	10
120	06273	15 12429	60 53221	44 59268	85	94763	053
130	10588	14 03029	59 41276	44 61753	85	92552	50
140	14902	15 78493570	58 29332	43 64238	86	90340	40
150	19217	14 84112	57 17389	43 66723	86	88120	30
160	23531	14 74655	56 05446	42 69209	87	85917	20
170	27845	15 65200	55 66793506	41 71694	87	83704	10
180	32159	14 55746	54 81566	40 74180	88	81493	053
190	36473	13 46293	53 69626	39 76667	88	79280	50
200	40787	13 36841	52 57688	38 79153	89	77068	40
210	45100	14 27390	51 45750	37 81640	89	74855	30
220	49414	13 17940	50 33813	36 84127	90	72642	20
230	53727	14 08492	49 21878	35 86614	90	70429	10
240	58041	13 78399045	47 09943	34 89102	91	68215	053
250	62354	13 89595	46 66698009	33 91590	91	66001	50
260	66667	14 80154	45 86075	32 94079	92	63788	40
270	70980	13 70710	44 74143	31 96567	92	61574	30
280	75293	14 61267	43 62231	30 99056	93	59359	20
290	79606	13 51825	42 50280	29 11701545	94	57145	10
300	83919	14 42384	41 38349	28 04035	95	54930	053
310	88231	13 32944	40 26419	27 06525	96	52715	50
320	92544	12 23505	39 14489	26 09016	97	50500	40
330	96856	13 14067	38 02561	25 11506	98	48285	30
340	45701168	14 04631	37 66590634	24 13997	99	46069	20
350	05481	13 78295196	36 78708	23 16482	100	43853	10
360	09793	12 85763	35 66784	22 18979	101	41637	053

Grad. 62.

S.M.

Grad. 27.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
12 0	45709793	12	78285763	32	66566784	24	11718979	92	88941637	30
10	14105		76331	31	54860	1921	21471	91	39421	30
10	18417	11	66900	30	42937	1921	23963	93	37205	40
30	22728	12	57470	29	31014	1921	26456	92	34988	30
40	27040	11	48040	19	19092	1921	28948	93	32771	30
50	31351	12	38611	18	07170	21	31441	93	30554	10
13 0	35663	11	29183	26	66495249	10	33934	49+	28337	047
10	39974	11	19757	25	83329	19	36418	49+	26120	50
20	44285	11	10332	24	71410	18	38922	49+	23902	40
30	48596	10	00908	23	59492	17	41416	75	21684	30
40	52907	10	78191485	22	47574	16	43911	94	19466	20
50	57218	10	82063	21	35658	15	46405	95	17248	10
14 0	61529	10	72642	19	23742	14	48900	96	15025	046
10	65840	10	63223	18	11827	13	51396	95	12811	50
10	70150	11	53805	17	66399914	12	53891	96	10592	40
30	74461	10	44388	16	88001	11	56387	97	08373	30
40	78771	10	34971	15	76089	10	58883	98	06153	20
50	83081	11	25557	14	64178	9	61379	97	03934	10
15 0	87392	10	16143	13	52267	8	63876	98	01714	045
10	91702	09	06730	12	40357	7	66373	98	88899494	50
10	96011	10	78097318	11	28447	6	68871	97	97274	40
30	45800321	09	87907	10	16535	5	71368	98	95054	30
40	04631	09	78498	08	04632	4	73866	98	92833	20
50	08941	09	69090	06	66292726	3	76364	99	90612	10
16 0	13250	09	59684	05	80821	2	78863	99	88391	044
10	17559	10	50275	04	68918	1	81361	98	86170	50
20	21869	10	40875	03	17015	0	83860	99	83949	40
30	26178	09	31472	02	45113	0	86359	1000	81727	30
40	30487	09	22066	01	33210	0	88859	01	79505	20
50	34796	08	12667	01	21308	0	91359	01	77283	10
17 0	39105	08	03166	00	09406	0	93860	01	75061	043
10	43413	09	77993867	00	66197506	0	96361	01	72839	50
20	47722	09	84462	00	85607	0	98862	01	70616	40
30	52031	08	75072	97	73709	0	11801363	02	68393	30
40	56339	08	65676	96	61811	0	03865	01	66170	20
50	60647	08	56281	95	49915	0	06366	01	63947	10
60	64955	08	46887	74	38019	0	08868	01	61723	042

Grad. 62.

S.M.

Mm. 2

Grad. 27.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	45864955	09	77946887	93	66138019	118	08868	03	88861723	60
10	69264	08	37494	92	26123	96	11371	02	59500	50
20	73572	07	28102	91	14229	94	13873	03	57276	40
30	77879	08	18711	89	04335	92	16376	04	55052	30
40	82187	07	09322	87	66090443	91	18879	05	52827	20
50	86495	07	77899935	86	78552	90	21383	04	50603	10
19 0	90802	08	90549	85	66662	91	23887	05	48378	00
10	95110	07	81163	84	54771	91	26392	04	46153	50
20	99417	06	71772	83	42883	11888	28896	03	43918	40
30	45903724	05	62396	82	30995	87	31401	02	41702	30
40	08031	04	53013	81	19107	86	33906	01	39477	20
50	12338	03	43631	80	07220	87	36411	00	37251	10
20 0	16645	02	34250	79	5995333	86	38917	00	35026	00
10	20952	01	24870	78	83447	83	41423	07	32790	50
20	25259	00	15491	77	71561	83	43930	06	30572	40
30	29565	07	06114	76	59678	83	46430	07	28346	30
40	33872	06	7779635	75	47790	83	48943	07	26116	20
50	38178	05	87365	74	35915	83	51450	08	23882	10
21 0	42484	04	77992	73	24034	79	53958	08	21665	00
10	46751	03	68619	72	12153	78	56466	09	19437	50
20	51097	02	59247	71	00272	79	58975	08	17210	40
30	55403	01	49876	70	65888393	78	61483	07	14982	30
40	59708	00	40507	69	76511	78	63992	06	12754	20
50	64014	00	31140	68	6463	78	66501	05	10525	10
22 0	68320	00	21774	67	52764	78	09010	04	8327	00
10	72625	00	12408	66	40888	78	71520	03	08062	50
20	76931	00	03043	65	29013	78	74030	02	03837	40
30	81236	00	77693679	64	17138	78	76541	01	01614	30
40	85541	00	84316	63	05265	78	79057	00	88199381	20
50	89846	00	74955	62	65793393	71	81562	00	97171	10
23 0	94151	00	65555	61	81522	71	84073	00	94421	00
10	98456	00	56236	60	69651	71	86583	00	92691	50
20	4607701	00	46878	59	57782	71	89096	00	90921	40
30	0.065	00	37522	58	45914	71	92608	00	88221	30
40	11370	00	28166	57	34046	71	94120	00	86000	20
50	15670	00	18811	56	22178	71	96623	00	83770	10
60	19980	00	09457	55	10311	71	9914	00	81550	00

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Sine	D.	Logarith.	D. Different	D.	Logarith.	D.	Sine	D.
77609457	5	65710311	5	11899145	14	58751539	60	
84825	5	65698444	5	11901660	14	79307	32	
8582	5	8657	5	124173	13	77076	21	
32601	+	81401	49	01887	15	74844	30	
47835	03	72052	28	09201	16	72612	20	
41465	04	62774	46	11715	15	70380	10	
41802	04	53351	5	14230	16	68148	035	
50106	01	44013	4	16745	16	65916	50	
54408	01	34565	0	19261	15	63683	33	
57712	04	25348	0	21776	16	61450	30	
61116	01	15485	0	24292	16	59217	20	
67116	01	06241	0	26808	15	56984	10	
71621	04	7487400	41	29324	17	54750	34	
75905	00	65915	40	31841	17	52518	50	
79227	00	56565	39	34358	18	50282	30	
84532	01	47115	38	36874	18	48041	50	
88733	01	37994	37	39392	17	45811	10	
93115	01	28613	36	41911	18	43570	60	
97437	02	19182	35	44425	18	41345	34	
101740	02	91950	34	46948	19	39110	35	
10641	02	82419	33	49467	20	36875	40	
11144	02	72888	32	51986	20	34639	50	
11644	02	63357	31	54504	19	32404	10	
12144	02	53826	30	57023	20	30169	10	
12644	02	44295	29	59542	21	27934	032	
13144	02	34764	28	62061	20	25699	70	
13644	02	25233	27	64580	21	23474	40	
14144	02	15702	26	67100	21	21239	10	
14644	02	6119	25	69619	22	19004	10	
15144	02	0000	24	72138	22	16769	10	
15644	02	0000	23	74657	23	14534	032	
16144	02	0000	22	77176	23	12299	10	
16644	02	0000	21	79695	24	10064	032	
17144	02	0000	20	82214	24	77829	10	
17644	02	0000	19	84733	25	75594	032	
18144	02	0000	18	87252	25	73359	10	
18644	02	0000	17	89771	26	71124	032	
19144	02	0000	16	92290	26	68889	10	
19644	02	0000	15	94809	27	66654	032	
20144	02	0000	14	97328	27	64419	10	
20644	02	0000	13	99847	28	62184	032	
21144	02	0000	12	101966	28	59949	10	
21644	02	0000	11	104485	29	57714	032	
22144	02	0000	10	107004	29	55479	10	
22644	02	0000	9	109523	30	53244	032	
23144	02	0000	8	112042	30	51009	10	
23644	02	0000	7	114561	31	48774	032	
24144	02	0000	6	117080	31	46539	10	
24644	02	0000	5	119599	32	44304	032	
25144	02	0000	4	122118	32	42069	10	
25644	02	0000	3	124637	33	39834	032	
26144	02	0000	2	127156	33	37599	10	
26644	02	0000	1	129675	34	35364	032	
27144	02	0000	0	132194	34	33129	10	
27644	02	0000	0	134713	35	30894	032	
28144	02	0000	0	137232	35	28659	10	
28644	02	0000	0	139751	36	26424	032	
29144	02	0000	0	142270	36	24189	10	
29644	02	0000	0	144789	37	21954	032	
30144	02	0000	0	147308	37	19719	10	
30644	02	0000	0	149827	38	17484	032	
31144	02	0000	0	152346	38	15249	10	
31644	02	0000	0	154865	39	13014	032	
32144	02	0000	0	157384	39	10779	10	
32644	02	0000	0	159903	40	8544	032	
33144	02	0000	0	162422	40	6310	10	
33644	02	0000	0	164941	41	4076	032	
34144	02	0000	0	167460	41	1842	10	
34644	02	0000	0	169979	42	0000	032	

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
30 0	46174861	01	77273466	01	65283658	1	11989808	23	88701083	40
10	79461	01	64153	01	71822	1	92331	23	88698845	38
20	83461	01	54841	01	59986	1	94355	24	96606	39
30	87762	00	45530	09	48150	34	97380	25	94367	40
40	92063	00	36222	08	86316	34	99905	25	92127	40
50	96362	99	26913	07	24483	33	12002430	26	89888	39
31 0	46200661	00	17606	06	12650	31	04956	35	87648	40
10	04961	00	08300	05	00815	31	07481	26	85408	40
20	09261	00	77193995	03	65188988	29	10007	26	83168	40
30	13560	00	89692	02	77159	29	12535	27	80937	40
40	17859	00	80389	01	65329	29	15060	27	78687	40
50	22159	99	72087	01	53500	29	17587	28	76436	40
32 0	26458	99	61786	00	41671	27	20115	27	74205	40
10	30757	98	52486	00	29844	27	22642	28	71964	40
20	35056	98	43187	00	18017	16	25170	28	69722	40
30	39354	99	33889	97	06191	25	27698	29	67481	40
40	43653	99	24592	94	65094366	23	30216	29	65239	40
50	47952	98	15298	93	82543	23	32755	30	60997	40
33 0	52250	98	06095	92	70720	21	35285	29	60754	40
10	56548	99	77096743	90	58899	22	37814	30	58512	40
20	60847	98	87423	89	47077	20	40344	30	56269	40
30	65145	97	78131	87	35257	17	42874	31	54020	40
40	69443	97	68841	86	23437	17	45404	31	51783	40
50	73741	97	59552	85	11617	15	47935	30	49540	40
34 0	78038	98	50265	84	64999800	15	50465	31	47290	40
10	82336	97	40975	83	87983	14	52996	32	45053	40
20	86634	97	31694	82	76166	13	55528	32	42804	40
30	90931	98	22410	81	64351	12	58059	33	40565	40
40	95229	97	13127	80	52536	12	60591	34	38320	40
50	99526	97	03845	79	40722	11	63123	33	36076	40
35 0	46303823	96	76394565	78	28905	10	65656	34	33831	40
10	08120	97	85286	77	17097	9	68189	34	31586	40
20	12417	97	76008	76	05285	8	70723	33	29341	40
30	16714	96	66730	75	64893474	7	73256	34	27093	40
40	21010	97	57453	74	81663	6	75750	34	24850	40
50	25307	97	48178	73	69834	5	78324	34	22604	40
60	29604	97	38904	72	58046	4	80858	34	20355	40

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(S. N.)

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Min.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
00	4342904	4196	76938904	73	4858746	08	12080858	35	88620358	60
10	37900		29631	73	46238	08	83393	35	18112	50
20	71186		10359	71	34431	07	84928	36	19085	40
30	42492		11088	70	22624	05	88464	35	13612	30
40	46788		01818	69	10819		90999	36	11372	20
50	71584		76893549	67	64719014	03	92555	36	09125	10
60	55380		83282	66	87211		96071	37	05877	00
70	50676		74016	65	75408		98608	36	04630	00
80	42971	95	64751	926	63607	11801	12101144	37	02382	40
90	45267		55487	926	51806		03681	37	00134	30
100	71562		46223	02	40005		06218	38	88997836	20
110	70857	96	36961	61	28103		08754	38	95618	10
120	81155	95	27770	00	16400		11244	39	81329	00
130	85448		18440	58	04807		13871	39	51141	50
140	78743		09181	57	44692210	94	16271	39	50952	40
150	74038		76794424		83014		18910	40	80841	30
160	98333		92465	56	67218		21449	40	84194	20
170	90627	94	81411	55	57422		23989	40	82144	10
180	66922	95	72155	55	45007	91	26529	41	7894	00
190	61216	94	62973	52	33332	92	29069	41	77044	00
200	55510	95	53711	51	22021	91	31610	41	7374	40
210	50805	94	44400	50	12654		34150	41	7044	30
220	46091		35150	49	4598459	80	36691	41	7044	20
230	41386		25901	48	30000		39222	42	66191	10
240	36687	93	16053	47	74800		41773	42	61191	00
250	30980	94	07406	46	63091		44311	42	56140	50
260	25274		76698160	45	51378		46858	42	51288	40
270	19565	53	88979	44	39315	87	49400	42	46237	30
280	13861		79474	42	27724		51943	43	41287	20
290	8154	74	70411	41	15921	75	54486	43	36336	10
300	2444	52	61388	40	04151	64	57029	44	31385	00
310	0744		51948	39	64492375		59571	44	26434	50
320	07034		42705	38	50502	63	62117	45	21483	40
330	71327	92	33471		18100		64662	45	16532	30
340	25619	93	24281	46	57027	52	67208	45	11581	20
350	70912		14977	45	45447	81	69754	45	6586	10
360	33255		05762	44	33411	80	72296		0084	00

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S.M.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 0	6434203	92	76605762	34	64433466	80	12172296	46	88539363	60
10	88497	92	76596528	33	21686	11778	74842	45	37109	50
20	9589	93	87295	32	09908	75	77387	46	34853	40
30	97082	4192	78063	30	64398130	73	79933	47	32601	30
40	46501374	91	68833	29	86354	71	82479	48	30346	20
50	03666	92	59604	28	74578	70	85026	49	28092	10
43 0	09958	91	50376	27	62803	68	87573	50	25837	0
10	14250	92	41149	26	51028	65	90121	51	23582	10
20	18541	93	31923	25	39255	63	92668	52	21327	20
30	22833	91	22698	24	27482	61	95216	53	19072	30
40	27124	92	13474	23	15710	59	97764	54	16816	40
50	31416	91	04251	22	03939	57	12100312	55	14558	50
44 0	35707	90	76495029	21	64292168	55	02861	56	12304	60
10	39998	91	85808	20	80398	53	05410	57	10048	70
20	44189	92	76588	19	68628	51	07960	58	07992	80
30	48580	93	67309	18	56860	49	10509	59	05553	90
40	52871	90	58151	17	45092	47	13059	60	03473	0
50	57161	91	48933	16	33326	45	15609	61	01011	10
45 0	61452	92	39720	15	21560	43	18160	62	884987	20
10	65743	93	30506	14	09795	41	20711	63	96504	30
20	70033	90	21291	13	64198030	39	23263	64	9424	40
30	74323	91	12081	12	86267	37	25814	65	91991	50
40	78613	92	02869	11	74503	35	28366	66	89731	60
50	82903	93	76393659	10	62741	33	30918	67	87474	70
46 0	87191	90	84455	9	50980	31	33470	68	85216	80
10	91483	91	75242	8	39219	29	36023	69	82917	90
20	9577	92	66035	7	27459	27	38576	70	80605	0
30	100006	93	56819	6	15699	25	41130	71	78219	10
40	0435	90	47025	5	03942	23	43683	72	76180	20
50	08641	91	38422	4	04092185	21	46237	73	73920	30
47 0	12931	92	29220	3	80429	19	48791	74	71660	40
10	17210	93	20019	2	68673	17	51346	75	69400	50
20	21505	90	10815	1	56919	15	53900	76	67140	60
30	25791	91	01620	0	45115	13	56455	77	64880	70
40	3008	92	7629242	0	33412	11	59010	78	62619	80
50	34375	93	83223	0	21655	9	61566	79	60359	90
60	38664	90	74029	0	09907	7	64122	80	58098	0

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S. M.

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M. S.	Sinas	D. Logarith.	D. Different	D. Logarith.	D. Different
54 0	4624984	7594769	57557100	7594769	57557100
10	97288	5434	75627	5434	75627
20	4610150	15285	61717	15285	61717
30	09881	16272	52194	16272	52194
40	10119	07080	40473	07080	40473
50	14407	75897928	28557	75897928	28557
55 0	18687	88277	17019	88277	17019
10	23973	70647	03819	70647	03819
20	87215	70473	5149100	70473	5149100
30	31538	81110	81878	81110	81878
40	32820	72184	70160	72184	70160
50	40106	45087	18887	45087	18887
56 0	54489	38887	40714	38887	40714
10	68876	2871	17000	2871	17000
20	12910	15285	24100	15285	24100
30	57343	16272	11000	16272	11000
40	61721	75897928	61721	75897928	61721
50	81804	88277	81804	88277	81804
57 0	00087	7594769	00087	7594769	00087
10	24185	7594769	00714	7594769	00714
20	75947	61717	00714	61717	00714
30	81714	70647	81714	70647	81714
40	87019	70473	87019	70473	87019
50	81287	81110	81287	81110	81287
58 0	81714	7594769	81714	7594769	81714
10	14000001	7594769	14000001	7594769	14000001
20	06784	61717	06784	61717	06784
30	06716	75897928	06716	75897928	06716
40	18000	88277	18000	88277	18000
50	17185	70647	17185	70647	17185
59 0	81714	70473	81714	70473	81714
10	81714	81110	81714	81110	81714
20	81714	7594769	81714	7594769	81714
30	81714	61717	81714	61717	81714
40	81714	70647	81714	70647	81714
50	81714	70473	81714	70473	81714
59 0	81714	81110	81714	81110	81714
10	81714	7594769	81714	7594769	81714
20	81714	61717	81714	61717	81714
30	81714	70647	81714	70647	81714
40	81714	70473	81714	70473	81714
50	81714	81110	81714	81110	81714

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S.	Sine	D	Logarithm	D.	Difference	D.	Logarithm	D.	Sine
0	47101188		79287196		62745111		10041790		10000000
10	05465	79	78117	78	31321		10041790	10	10000000
20	09741	78	69031	77	27921		10041790	20	10000000
30	14012	77	59562	76	24254		10041790	30	10000000
40	18294	76	50280	75	20692		10041790	40	10000000
50	22570	75	41215	74	16974		10041790	50	10000000
60	26826	74	32317	73	13560		10041790	60	10000000
70	31111	73	23664	72	10306		10041790	70	10000000
80	35302	72	14797	71	7243		10041790	80	10000000
90	39674	71	65541	70	40272		10041790	90	10000000
100	43945	70	58198	69	28607		10041790	100	10000000
110	48231	69	50344	68	16940		10041790	110	10000000
120	52505	68	42117	67	50006		10041790	120	10000000
130	56775	67	33621	66	38151		10041790	130	10000000
140	61031	66	24848	65	26074		10041790	140	10000000
150	65282	65	15810	64	13817		10041790	150	10000000
160	69520	64	7000	63	1260		10041790	160	10000000
170	73757	63	14751	62	67007		10041790	170	10000000
180	78157	62	61157	61	35348		10041790	180	10000000
190	82411	61	14751	60	23691		10041790	190	10000000
200	86710	60	7000	59	12040		10041790	200	10000000
210	90770	59	14751	58	67007		10041790	210	10000000
220	94770	58	61157	57	35348		10041790	220	10000000
230	98710	57	14751	56	23691		10041790	230	10000000
240	102500	56	7000	55	12040		10041790	240	10000000
250	106240	55	14751	54	67007		10041790	250	10000000
260	109940	54	61157	53	35348		10041790	260	10000000
270	113590	53	14751	52	23691		10041790	270	10000000
280	117190	52	7000	51	12040		10041790	280	10000000
290	120740	51	14751	50	67007		10041790	290	10000000
300	124240	50	61157	49	35348		10041790	300	10000000
310	127690	49	14751	48	23691		10041790	310	10000000
320	131090	48	7000	47	12040		10041790	320	10000000
330	134440	47	14751	46	67007		10041790	330	10000000
340	137740	46	61157	45	35348		10041790	340	10000000
350	140990	45	14751	44	23691		10041790	350	10000000
360	144190	44	7000	43	12040		10041790	360	10000000
370	147340	43	14751	42	67007		10041790	370	10000000
380	150440	42	61157	41	35348		10041790	380	10000000
390	153490	41	14751	40	23691		10041790	390	10000000
400	156490	40	7000	39	12040		10041790	400	10000000
410	159440	39	14751	38	67007		10041790	410	10000000
420	162340	38	61157	37	35348		10041790	420	10000000
430	165190	37	14751	36	23691		10041790	430	10000000
440	167990	36	7000	35	12040		10041790	440	10000000
450	170740	35	14751	34	67007		10041790	450	10000000
460	173440	34	61157	33	35348		10041790	460	10000000
470	176090	33	14751	32	23691		10041790	470	10000000
480	178690	32	7000	31	12040		10041790	480	10000000
490	181240	31	14751	30	67007		10041790	490	10000000
500	183740	30	61157	29	35348		10041790	500	10000000
510	186190	29	14751	28	23691		10041790	510	10000000
520	188590	28	7000	27	12040		10041790	520	10000000
530	190940	27	14751	26	67007		10041790	530	10000000
540	193240	26	61157	25	35348		10041790	540	10000000
550	195490	25	14751	24	23691		10041790	550	10000000
560	197690	24	7000	23	12040		10041790	560	10000000
570	199840	23	14751	22	67007		10041790	570	10000000
580	201940	22	61157	21	35348		10041790	580	10000000
590	203990	21	14751	20	23691		10041790	590	10000000
600	205990	20	7000	19	12040		10041790	600	10000000

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Ann.	D.	Logarithm	Ann.	D.	Logarithm	Ann.	D.	Logarithm	Ann.	D.	Logarithm
100000		7.0000000	100000		8.2531417	100000		8.1301345	91	60	
100001		11934	100001		37307	100001		18054	91	50	
100002		23868	100002		40187	100002		25753	91	40	
100003		35802	100003		43067	100003		33471	91	30	
100004		47736	100004		45947	100004		41180	91	20	
100005		59670	100005		48827	100005		48888	91	10	
100006		71604	100006		51707	100006		56596	91	047	
100007		83538	100007		54587	100007		64303	91	00	
100008		95472	100008		57467	100008		72011	91	00	
100009		107406	100009		60347	100009		79718	91	00	
100010		119340	100010		63227	100010		87426	91	00	
100011		131274	100011		66107	100011		95134	91	00	
100012		143208	100012		68987	100012		102842	91	046	
100013		155142	100013		71867	100013		110550	91	00	
100014		167076	100014		74747	100014		118258	91	00	
100015		179010	100015		77627	100015		125966	91	00	
100016		190944	100016		80507	100016		133674	91	045	
100017		202878	100017		83387	100017		141382	91	00	
100018		214812	100018		86267	100018		149090	91	00	
100019		226746	100019		89147	100019		156798	91	00	
100020		238680	100020		92027	100020		164506	91	00	
100021		250614	100021		94907	100021		172214	91	044	
100022		262548	100022		97787	100022		179922	91	00	
100023		274482	100023		100667	100023		187630	91	00	
100024		286416	100024		103547	100024		195338	91	00	
100025		298350	100025		106427	100025		203046	91	00	
100026		310284	100026		109307	100026		210754	91	00	
100027		322218	100027		112187	100027		218462	91	00	
100028		334152	100028		115067	100028		226170	91	00	
100029		346086	100029		117947	100029		233878	91	00	
100030		358020	100030		120827	100030		241586	91	00	
100031		369954	100031		123707	100031		249294	91	00	
100032		381888	100032		126587	100032		257002	91	00	
100033		393822	100033		129467	100033		264710	91	00	
100034		405756	100034		132347	100034		272418	91	00	
100035		417690	100035		135227	100035		280126	91	00	
100036		429624	100036		138107	100036		287834	91	00	
100037		441558	100037		140987	100037		295542	91	00	
100038		453492	100038		143867	100038		303250	91	00	
100039		465426	100039		146747	100039		310958	91	00	
100040		477360	100040		149627	100040		318666	91	00	
100041		489294	100041		152507	100041		326374	91	00	
100042		501228	100042		155387	100042		334082	91	00	
100043		513162	100043		158267	100043		341790	91	00	
100044		525096	100044		161147	100044		349498	91	00	
100045		537030	100045		164027	100045		357206	91	00	
100046		548964	100046		166907	100046		364914	91	00	
100047		560898	100047		169787	100047		372622	91	00	
100048		572832	100048		172667	100048		380330	91	00	
100049		584766	100049		175547	100049		388038	91	00	
100050		596700	100050		178427	100050		395746	91	00	
100051		608634	100051		181307	100051		403454	91	00	
100052		620568	100052		184187	100052		411162	91	00	
100053		632502	100053		187067	100053		418870	91	00	
100054		644436	100054		189947	100054		426578	91	00	
100055		656370	100055		192827	100055		434286	91	00	
100056		668304	100056		195707	100056		441994	91	00	
100057		680238	100057		198587	100057		449702	91	00	
100058		692172	100058		201467	100058		457410	91	00	
100059		704106	100059		204347	100059		465118	91	00	
100060		716040	100060		207227	100060		472826	91	00	
100061		727974	100061		210107	100061		480534	91	00	
100062		739908	100062		212987	100062		488242	91	00	
100063		751842	100063		215867	100063		495950	91	00	
100064		763776	100064		218747	100064		503658	91	00	
100065		775710	100065		221627	100065		511366	91	00	
100066		787644	100066		224507	100066		519074	91	00	
100067		799578	100067		227387	100067		526782	91	00	
100068		811512	100068		230267	100068		534490	91	00	
100069		823446	100069		233147	100069		542198	91	00	
100070		835380	100070		236027	100070		549906	91	00	
100071		847314	100071		238907	100071		557614	91	00	
100072		859248	100072		241787	100072		565322	91	00	
100073		871182	100073		244667	100073		573030	91	00	
100074		883116	100074		247547	100074		580738	91	00	
100075		895050	100075		250427	100075		588446	91	00	
100076		906984	100076		253307	100076		596154	91	00	
100077		918918	100077		256187	100077		603862	91	00	
100078		930852	100078		259067	100078		611570	91	00	
100079		942786	100079		261947	100079		619278	91	00	
100080		954720	100080		264827	100080		626986	91	00	
100081		966654	100081		267707	100081		634694	91	00	
100082		978588	100082		270587	100082		642402	91	00	
100083		990522	100083		273467	100083		650110	91	00	
100084		1002456	100084		276347	100084		657818	91	00	
100085		1014390	100085		279227	100085		665526	91	00	
100086		1026324	100086		282107	100086		673234	91	00	
100087		1038258	100087		284987	100087		680942	91	00	
100088		1050192	100088		287867	100088		688650	91	00	
100089		1062126	100089		290747	100089		696358	91	00	
100090		1074060	100090		293627	100090		704066	91	00	
100091		1085994	100091		296507	100091		711774	91	00	
100092		1097928	100092		299387	100092		719482	91	00	
100093		1109862	100093		302267	100093		727190	91	00	
100094		1121796	100094		305147	100094		734898	91	00	
100095		1133730	100095		308027	100095		742606	91	00	
100096		1145664	100096		310907	100096		750314	91	00	
100097		1157598	100097		313787	100097		758022	91	00	
100098		1169532	100098		316667	100098		765730	91	00	
100099		1181466	100099		319547	100099		773438	91	00	
100100		1193400	100100		322427	100100		781146	91	00	

Rad. 28.

41-

Year	Month	Day	Time	Temp.	Wind	Clouds	Remarks
18	4	4082					
10		4083					
20		4084					
30		4085					
40		4086					
50		4087					
19	4	4088					
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5-120 200

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S	Sine	D	Logarithm	D	Logarithm	D	Sine
1	0.0175	60	73990601	60	64072753	60	0.0175
2	0.0350	60	81672	60	61152	60	0.0350
3	0.0525	60	71744	60	49632	60	0.0525
4	0.0700	60	63818	60	38071	60	0.0700
5	0.0875	60	54891	60	26513	60	0.0875
6	0.1050	60	45967	60	14935	60	0.1050
7	0.1225	60	37044	60	03392	60	0.1225
8	0.1400	60	28120	60	02991842	60	0.1400
9	0.1575	60	19201	60	80186	60	0.1575
10	0.1750	60	10281	60	62731	60	0.1750
11	0.1925	60	01360	60	57174	60	0.1925
12	0.2100	60	73892442	60	45629	60	0.2100
13	0.2275	60	83525	60	34068	60	0.2275
14	0.2450	60	74601	60	22517	60	0.2450
15	0.2625	60	65694	60	10964	60	0.2625
16	0.2800	60	56782	60	024921	60	0.2800
17	0.2975	60	47867	60	27302	60	0.2975
18	0.3150	60	38954	60	76513	60	0.3150
19	0.3325	60	30043	60	64764	60	0.3325
20	0.3500	60	21133	60	53216	60	0.3500
21	0.3675	60	12224	60	41883	60	0.3675
22	0.3850	60	03315	60	30744	60	0.3850
23	0.4025	60	71944444	60	19315	60	0.4025
24	0.4200	60	62031	60	08081	60	0.4200
25	0.4375	60	52118	60	020387	60	0.4375
26	0.4550	60	42204	60	19081	60	0.4550
27	0.4725	60	32291	60	74122	60	0.4725
28	0.4900	60	22378	60	60101	60	0.4900
29	0.5075	60	12465	60	46071	60	0.5075
30	0.5250	60	02552	60	32031	60	0.5250
31	0.5425	60	71944444	60	17981	60	0.5425
32	0.5600	60	62031	60	03931	60	0.5600
33	0.5775	60	52118	60	09881	60	0.5775
34	0.5950	60	42204	60	15831	60	0.5950
35	0.6125	60	32291	60	21781	60	0.6125
36	0.6300	60	22378	60	27731	60	0.6300
37	0.6475	60	12465	60	33681	60	0.6475
38	0.6650	60	02552	60	39631	60	0.6650
39	0.6825	60	71944444	60	45581	60	0.6825
40	0.7000	60	62031	60	51531	60	0.7000
41	0.7175	60	52118	60	57481	60	0.7175
42	0.7350	60	42204	60	63431	60	0.7350
43	0.7525	60	32291	60	69381	60	0.7525
44	0.7700	60	22378	60	75331	60	0.7700
45	0.7875	60	12465	60	81281	60	0.7875
46	0.8050	60	02552	60	87231	60	0.8050
47	0.8225	60	71944444	60	93181	60	0.8225
48	0.8400	60	62031	60	99131	60	0.8400
49	0.8575	60	52118	60	05081	60	0.8575
50	0.8750	60	42204	60	11031	60	0.8750
51	0.8925	60	32291	60	16981	60	0.8925
52	0.9100	60	22378	60	22931	60	0.9100
53	0.9275	60	12465	60	28881	60	0.9275
54	0.9450	60	02552	60	34831	60	0.9450
55	0.9625	60	71944444	60	40781	60	0.9625
56	0.9800	60	62031	60	46731	60	0.9800
57	0.9975	60	52118	60	52681	60	0.9975
58	1.0150	60	42204	60	58631	60	1.0150
59	1.0325	60	32291	60	64581	60	1.0325
60	1.0500	60	22378	60	70531	60	1.0500
61	1.0675	60	12465	60	76481	60	1.0675
62	1.0850	60	02552	60	82431	60	1.0850
63	1.1025	60	71944444	60	88381	60	1.1025
64	1.1200	60	62031	60	94331	60	1.1200
65	1.1375	60	52118	60	00281	60	1.1375
66	1.1550	60	42204	60	06231	60	1.1550
67	1.1725	60	32291	60	12181	60	1.1725
68	1.1900	60	22378	60	18131	60	1.1900
69	1.2075	60	12465	60	24081	60	1.2075
70	1.2250	60	02552	60	30031	60	1.2250
71	1.2425	60	71944444	60	35981	60	1.2425
72	1.2600	60	62031	60	41931	60	1.2600
73	1.2775	60	52118	60	47881	60	1.2775
74	1.2950	60	42204	60	53831	60	1.2950
75	1.3125	60	32291	60	59781	60	1.3125
76	1.3300	60	22378	60	65731	60	1.3300
77	1.3475	60	12465	60	71681	60	1.3475
78	1.3650	60	02552	60	77631	60	1.3650
79	1.3825	60	71944444	60	83581	60	1.3825
80	1.4000	60	62031	60	89531	60	1.4000
81	1.4175	60	52118	60	95481	60	1.4175
82	1.4350	60	42204	60	01431	60	1.4350
83	1.4525	60	32291	60	07381	60	1.4525
84	1.4700	60	22378	60	13331	60	1.4700
85	1.4875	60	12465	60	19281	60	1.4875
86	1.5050	60	02552	60	25231	60	1.5050
87	1.5225	60	71944444	60	31181	60	1.5225
88	1.5400	60	62031	60	37131	60	1.5400
89	1.5575	60	52118	60	43081	60	1.5575
90	1.5750	60	42204	60	49031	60	1.5750
91	1.5925	60	32291	60	54981	60	1.5925
92	1.6100	60	22378	60	60931	60	1.6100
93	1.6275	60	12465	60	66881	60	1.6275
94	1.6450	60	02552	60	72831	60	1.6450
95	1.6625	60	71944444	60	78781	60	1.6625
96	1.6800	60	62031	60	84731	60	1.6800
97	1.6975	60	52118	60	90681	60	1.6975
98	1.7150	60	42204	60	96631	60	1.7150
99	1.7325	60	32291	60	02581	60	1.7325
100	1.7500	60	22378	60	08531	60	1.7500

Grad. 28.

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S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	47869186	56	73669820	92	60657012	35	13012808	43	87798298	60
10	73442	57	60928	90	45477	35	15451	43	95977	50
20	77699	4256	51038	88	33943	34	18005	2644	93650	40
30	81955	56	43149	88	22410	1153	20735	2644	91334	30
40	86211	56	34260	88	10877	1153	23383	-5	89013	20
50	90467	56	25371	87	60599344	32	26028	-5	86091	10
60	94723	55	16485	87	87811	32	28673	46	84365	023
70	98979	55	07599	86	76280	30	31319	45	82047	50
80	47903235	55	73598714	84	64750	30	33962	4	79725	40
90	07490	56	89830	82	53220	28	36610	3	77402	30
100	11746	55	80948	81	41692	28	39250	2	75080	20
110	16001	56	72067	79	30165	27	41902	47	72757	10
120	20257	55	63188	78	18639	26	44545	47	70434	022
130	24512	55	54309	78	07113	25	47197	48	68110	50
140	28767	54	45431	77	60495585	25	49844	47	65787	40
150	33022	54	36554	74	84063	24	52491	48	63463	30
160	37277	54	27677	76	71538	24	55134	49	61134	20
170	41533	55	18801	74	61014	23	57787	49	58815	10
180	45786	54	09927	73	49491	22	60436	50	56490	021
190	50041	54	01054	72	37961	21	63085	50	54166	50
200	54295	53	73492182	71	26447	20	65735	49	51841	40
210	58545	53	83311	70	14927	19	68384	50	49516	30
220	62803	53	74441	69	03407	18	71034	51	47191	20
230	67057	53	65571	68	60391887	17	73684	51	44865	10
240	71311	53	56703	67	80365	16	76334	51	42540	020
250	75565	53	47836	66	68851	15	78985	52	40214	50
260	79819	53	38970	65	57324	14	81636	52	37888	40
270	84072	54	30105	64	45817	13	84288	51	35562	30
280	88326	53	21241	63	34302	12	86939	52	33235	20
290	92579	54	12378	62	22787	11	89591	52	30909	10
300	96833	53	03516	61	11273	10	92243	53	28582	019
310	48001086	53	73394655	60	60299755	9	94896	53	26255	50
320	05339	53	85796	59	88247	8	97549	54	23927	40
330	09591	52	76917	58	76735	7	13100202	54	21600	30
340	13844	53	68079	57	65223	6	01856	53	19374	20
350	18097	53	59221	56	53712	5	05509	54	16944	10
360	22350	53	50366	56	42203	4	08163	54	14616	018

Grad. 61.

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Grad. 28.

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L. S.	Sinus.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus.	D.	
20	48022350	52	73350366	55	60242203	13	108163	54	87714616	28	60
10	26602	53	41511	54	30694	10817		55	12288	50	
20	30855	451	32657	54	19185	13472		55	49960	40	
30	35107	52	23805	55	07678	16127		56	07631	30	
40	39359	53	14953	56	60196170	18783		57	05302	20	
50	43611	54	06102	51	84663	21439		58	02973	10	
30	47863	52	73297252	50	73157	24095		57	00644	0	17
10	52115	51	88403	49	61651	26752		56	87698314	50	
20	56366	52	79555	48	50147	29408		57	95984	40	
30	60618	51	70708	47	38643	32065		58	93654	30	
40	64869	52	61863	46	27141	34722		59	91324	20	
50	69120	51	53019	44	15640	37379		60	88994	10	
40	73372	52	44176	43	04139	40037		61	86663	0	16
30	77623	51	35334	42	60092639	42695		62	84331	50	
20	81874	50	26493	41	81139	45354		63	82001	40	
30	86125	50	17655	40	69640	48013		64	79670	30	
40	90376	51	08813	39	58141	50672		65	77339	20	
50	94626	52	73199974	38	46643	53331		66	75007	10	
60	98877	53	91136	37	35145	55991		67	72676	0	15
70	48103127	54	82299	36	23648	58651		68	70344	50	
80	07373	55	73463	35	12151	61312		69	68011	40	
90	11628	56	64628	34	00656	63972		70	65675	30	
00	15878	57	55795	33	59989162	66633		71	63346	20	
10	20128	58	46963	32	77665	69294		72	61013	10	
20	24378	59	38132	31	66177	71955		73	58680	0	14
30	28628	60	29302	30	54685	74617		74	56347	50	
40	32877	61	20473	29	43194	77279		75	54014	40	
50	37127	62	11645	28	31703	79942		76	51680	30	
60	41376	63	02817	27	20253	82604		77	49346	20	
70	45625	64	73093990	26	08723	85267		78	47012	10	
80	49875	65	85165	25	59897235	87930		79	44678	0	13
90	54124	66	76341	24	85748	90593		80	42343	50	
00	58373	67	67518	23	74261	93257		81	40009	40	
10	62622	68	58696	22	62775	95921		82	37674	30	
20	66870	69	49874	21	51288	98586		83	35339	20	
30	71119	70	41054	20	39803	12201251		84	33003	10	
40	75368	71	32235	19	28319	03916		85	30668	0	11

Grad. 61.

S. M.

Grad. 29.

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S	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D	Sinus.	D
29	48175368	73032235	59828319	13202916	61	87630668	50
30	78616	23417	16835	06582	62	28322	50
40	83864	14600	05353	09247	63	25490	50
50	88111	05784	59793871	11913	64	23500	50
60	92360	72996969	82390	14974	65	21324	50
70	96608	88154	70908	17246	66	1898	50
80	48100856	79341	59428	19913	67	16651	50
90	05104	70529	47948	22581	68	14314	50
00	09351	61713	36470	25248	69	11977	50
10	13599	52903	24992	27916	70	09636	50
20	17846	44098	13514	30584	71	07302	50
30	22094	35290	02038	33252	72	04964	50
40	26441	26483	59690562	35921	73	02616	50
50	30588	17677	79087	38590	74	00288	50
60	34835	08872	67612	41260	75	87597949	50
70	39081	00065	56139	43929	76	95611	50
80	43328	72891265	44666	46599	77	93272	50
90	47575	82462	33194	49269	78	90933	50
00	51821	73662	21722	51940	79	88594	50
10	56068	64862	10251	54611	80	86254	50
20	60314	56063	59598781	57282	81	83915	50
30	64560	47265	87312	59953	82	81575	50
40	68806	38469	75844	62625	83	79235	50
50	73052	29673	64376	65297	84	76895	50
60	77298	20878	52908	67970	85	74554	50
70	81543	12084	41441	70643	86	72213	50
80	85789	03291	29973	73316	87	69873	50
90	90034	72794500	18510	75990	88	67532	50
00	94280	85709	07046	78663	89	65190	50
10	98525	76919	59495582	81337	90	62849	50
20	48302770	68130	84119	84011	91	60507	50
30	07015	59342	72656	86686	92	58165	50
40	11260	50555	61194	89361	93	55823	50
50	15505	41769	49733	92036	94	53481	50
60	19749	32984	38272	94712	95	51138	50
70	23994	24200	26813	97387	96	48796	50
80	28238	15417	15354	1330063	97	46453	50

Grad. 60.

S.M.

Grad. 20.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54 0	48328238		72715417		59415354		13300063		87546453	60
10	32483	45	06635	81	03896	1	02739	76	44110	43
20	36727	44	72697854	81	59392438	2	05416	77	41766	44
30	40971	43	89074	78	80981	3	08093	78	39423	43
40	45215	42	80294	77	69523	4	10771	79	37079	42
50	49459	41	71516	76	58067	5	13449	80	34735	41
55 0	53703	40	62739	75	46612	6	16127	81	32391	40
10	57946	39	53963	74	35157	7	18806	82	30047	39
20	62190	38	45188	73	23704	8	21484	83	27702	38
30	66433	37	36414	72	12251	9	24163	84	25357	37
40	70676	36	27641	71	00799	10	26842	85	23012	36
50	74920	35	18869	70	59289347	11	29522	86	20667	35
56 0	79163	34	10098	69	77896	12	32202	87	18322	34
10	83406	33	01328	68	66445	13	34883	88	15976	33
20	87648	32	72592559	67	54996	14	37563	89	13630	32
30	91891	31	83792	66	43548	15	40244	90	11284	31
40	96134	30	75925	65	32100	16	42925	91	08938	30
50	48400376	29	66259	64	20653	17	45606	92	06592	29
57 0	04619	28	57494	63	09206	18	48288	93	04245	28
10	08861	27	48730	62	59197760	19	50970	94	01898	27
20	13103	26	39968	61	86315	20	53653	95	87499551	26
30	17345	25	31207	60	74872	21	56335	96	97204	25
40	21587	24	22446	59	63428	22	59018	97	94856	24
50	25829	23	13686	58	51985	23	61701	98	92509	23
58 0	30071	22	04927	57	40542	24	64385	99	90161	22
10	34312	21	72496169	56	29100	25	67069	0	87813	21
20	38554	20	87413	55	17660	26	69753	1	85465	20
30	42795	19	78658	54	06220	27	72438	2	83116	19
40	47036	18	69903	53	59094781	28	75122	3	80768	18
50	51277	17	61149	52	83342	29	77807	4	78419	17
59 0	55518	16	52396	51	71904	30	80492	5	76070	16
10	59759	15	43644	50	60466	31	83178	6	73710	15
20	64000	14	34894	49	49030	32	85864	7	71371	14
30	68241	13	26145	48	37595	33	88550	8	69021	13
40	72481	12	17396	47	26155	34	91237	9	66671	12
50	76722	11	08648	46	14725	35	93923	10	64321	11
60	80962	10	99901	45	03291	36	96610	11	61971	10

Grad. 51.

S.M.

Grad. 29

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M.S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D.	Sinus.	D.		
0	4848096	4140	72399901	46	59003291	13396610	87	87461971	10
10	85201	4140	91155	44	58991855	99197	87	59620	50
20	89442	4140	82411	42	80426	13401585	87	57260	40
30	93682	4140	73668	40	68995	04673	87	54919	30
40	97922	4140	64925	38	57564	07361	87	52567	20
50	102162	4140	56183	36	46133	10090	87	50216	10
60	06402	39	47444	34	34703	12739	87	47864	059
70	10641	40	38702	32	23273	15420	87	45513	50
80	14881	39	29963	30	11845	18118	87	43161	40
90	19120	38	21226	28	00418	20808	87	40809	30
00	23359	37	12489	26	58888991	23498	87	38456	20
10	27598	36	03753	24	77565	26188	87	36104	10
20	31837	35	72295018	22	66139	28879	87	33751	058
30	36676	34	86284	20	54714	31570	87	31398	50
40	40315	33	77551	18	43289	34262	87	29045	40
50	44553	32	68820	16	31866	36954	87	26691	30
60	48792	31	60089	14	20443	39646	87	24338	20
70	53030	30	51359	12	09021	42338	87	21984	10
80	57269	29	42630	10	58797599	45031	87	19630	057
90	61507	28	33902	8	86178	47724	87	17276	50
00	65745	27	25175	6	74757	50418	87	14922	40
10	69983	26	16450	4	63339	53111	87	12567	30
20	74221	25	07725	2	51920	55805	87	10212	20
30	78458	24	72199001	0	40502	58499	87	07857	10
40	82696	23	90278	0	29084	61194	87	05501	056
50	86933	22	81556	0	17667	63889	87	03146	50
60	91171	21	72835	0	06250	66585	87	00790	40
70	95408	20	64116	0	58694836	69280	87	87398434	30
80	99645	19	55397	0	83421	71976	87	96078	20
90	48603882	18	46679	0	72007	74672	87	93722	10
00	08119	17	37962	0	60594	77368	87	91366	055
10	12356	16	29246	0	49181	80065	87	89009	50
20	16592	15	20531	0	37769	82762	87	86652	40
30	20829	14	11818	0	26359	85459	87	84295	30
40	25065	13	3105	0	14948	88157	87	81938	20
50	29302	12	72094393	0	03538	90855	87	79580	10
60	33538	11	83682	0	58592128	93554	87	77223	054

Grad. 60.

S.M.

Grad. 29.

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C. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	48633438		72085681	10	58592128		13493554		87377221	60
10	37774	1	76971	11	80719	09	96253	1690	74864	50
20	42010	2	68263	09	69311	08	98952	2700	72506	40
30	46246	3	59555	08	57904	11	13501651	3700	70148	30
40	50482	4	50848	07	46497	10	04351	4700	67789	20
50	54717	5	42142	06	35091	09	07051	5700	65431	10
60	58953	6	33437	05	23686	08	09751	6700	63072	053
70	63188	7	24733	04	12281	07	12452	7700	60713	50
80	67424	8	16030	03	00877	06	15153	8700	58353	40
90	71659	9	07328	02	58489474	05	17854	9700	55994	30
100	75894	10	71998627	01	78071	04	20556	01	53634	20
110	80129	11	89917	00	66670	03	23257	01	51274	10
120	84364	12	81128	00	55269	02	25959	02	48914	053
130	88599	13	72530	98	43869	01	28662	03	46553	50
140	92833	14	63833	97	32469	00	31364	03	44193	40
150	97068	15	55137	96	21070	11	34067	04	41832	30
160	48701302	16	46442	95	09672	10	36770	04	39471	20
170	05536	17	37748	94	58398275	09	39473	04	37110	10
180	09771	18	29055	93	86878	08	42177	05	34748	051
190	14005	19	20363	92	75482	07	44881	05	32387	50
200	18239	20	11672	91	64086	06	47586	05	30025	40
210	22472	21	02981	90	52692	05	50290	06	27663	30
220	26706	22	71894293	89	41298	04	52995	06	25301	20
230	30940	23	85605	88	29905	03	55700	06	22938	10
240	35173	24	76918	87	18512	02	58406	07	20575	050
250	39406	25	68232	86	07120	01	61112	07	18213	50
260	43640	26	59547	85	58295728	00	63819	07	15850	40
270	47873	27	50863	84	84338	99	66525	08	13486	30
280	52106	28	42179	83	72947	98	69132	08	11123	20
290	56339	29	33497	82	61558	97	71939	08	08759	10
300	60572	30	24816	81	50169	96	74647	09	06395	040
310	64804	31	16136	80	38783	95	77355	09	04031	50
320	69037	32	07457	79	27393	94	80064	09	01667	40
330	73269	33	71798779	78	16007	93	82772	09	87299302	30
340	77502	34	90101	76	04620	92	85488	09	96938	20
350	81734	35	81425	75	58193235	91	88190	09	94573	10
360	85966	36	72750	73	81851	90	90899	09	92208	048

Grad. 60.

S.M.

Grad. 29.

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M. S.	Sinus.	D.	Logarith.	D.	Difference.	D.	Logarith.	D.	Sinus.	D.
10	48785966	4132	71772750	74	58181851	84	13590899	10	87192208	60
10	90198		64076	74	70467	84	93609	10	89842	60
10	94430		55403	73	59084	83	96319	11	87477	69
10	98662		46731	69	47701	82	99030	10	85111	30
40	48802893	31	38019	69	36319	82	13601740	11	81745	20
50	07125	31	29388	69	24937	80	04451	11	80379	10
10	11356		20719	68	13557		07162		78013	67
10	15587		12051	67	02177	79	09874		75646	66
10	19819		03384	66	58090798	78	12586		73280	67
10	24050		71694718		79410	79	15298		70913	68
10	28281		86052		68041	79	18011		68545	68
10	32511		77387		56664	77	20723		66178	67
10	36742		68723		45287	75	23436		63810	67
10	40973		60061		33912		26149		61443	67
10	45203		51400		22537		28863		59075	69
10	49434		42740		11163		31577		56706	68
10	53664		34080		57999789		34391		54338	68
10	57894		25421		88415		37006		51970	69
10	62124		16764		77043		39721		49601	69
10	66354		08108		65671		42437		47232	70
10	70584		71599453		54301		45152		44862	70
10	74814		90799		42931		47868		42493	69
10	79043		82145		31501		50584		40123	70
10	83272		73492		20100		53300		37754	69
10	87502		64840		08823		56017		35384	70
10	91731		56189		97897455		58734		33013	71
10	95960		47540		86088		61452		30643	71
10	48900189		38892		74723		64169		28272	71
10	04418		30044		63357		66887		25901	70
10	08647		21597		51990		69605		23530	70
10	12876		02951		40627		72324		21159	70
10	17104		04306		29263		75043		18788	71
10	21333		71495663		17900		77763		16416	72
10	25561		87021		06530		80482		14044	71
10	29789		78379		57795177		83201		11672	72
10	34017		69738		33811		85922		09300	73
10	38245		61098		72450		88642		06927	73

Grad. 60.

S.M.

Grad. 29.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinu.	D.	
18 °	48938145	28	71461098	39	57772456	60	13688642	21	87206927	72	60
10	41473		52459	39	61096	58	91363	21	04555	72	50
20	46701	27	43812	37	49738		94084	21	02182	73	40
30	50928	28	35186	36	38380		96806	21	87199809	74	30
40	55156	37	26550	35	27023	57	99527	22	97435	74	20
50	59383	28	17915	35	15666		13702149	22	95062	73	10
19 °	63611	42	09281	34	04310	56	04971	23	92688	74	041
10	67838	27	00648	33	57692954	55	07694	23	90314	74	50
20	72065	27	71392016	32	81599		10417	24	87940	74	40
30	76292	26	83385	31	70244	53	13141	23	85566	75	10
40	80519	26	74755	28	58291		15864	24	83191	75	00
50	84745	27	66126	28	47538	52	18588	24	80816	75	10
20 °	88972	26	57498	27	36186		21312	25	78441	76	040
10	93198	27	48871	26	24834	51	24037	25	76066	76	10
20	97425	26	40245	25	13483	50	26762	26	73691	76	40
30	49901651		31610	24	02133		29487	26	71315	77	30
40	05877		22996	23	57590783	48	32213	25	68940	77	20
50	10103		14373	22	79435		34938	26	66564	77	10
21 °	14329		05751	21	68087	47	37664	26	64187	77	039
10	18555	25	71297130	20	56740		40390	27	61911	77	50
20	22780	26	88510	19	45393	1346	43117	27	59434	77	40
30	27006	25	79891	18	34047		45844	28	57058	77	30
40	31231	26	71272	17	22701		48571	28	54681	77	20
50	35457	25	62654	16	11355	44	51299	28	52303	78	10
22 °	39682		54036	15	00011		54027	29	49926	77	058
10	43907		45423	14	57488667	42	56756	28	47548	77	50
20	48132		36809	13	77325		59484	29	45171	78	40
30	52357		28196	12	65983		62211	29	42793	79	30
40	56582	24	19583	11	54641	41	64942	30	40414	78	20
50	60806	25	10971	10	43300		67671	30	38036	79	10
23 °	65031	24	02360	9	31959	40	70401	31	35657	79	037
10	69255		71193750	8	20619		73131	31	33278	80	50
20	73479	25	85141	7	09270	38	75862	31	30890	79	40
30	77704	24	76533	6	57397941	37	78552	30	28520	80	30
40	81928		67927	5	86604		81323	31	26141	80	20
50	86152	23	59322	4	75268	36	84054	32	23761	80	10
60	90375		50718		63932		86786	32	21381	81	00

Grad. 30.

S.M.

Sine.	D.	Logarith.	D.	Difference.	D.	Logarith.	D.	Sine.	D.
1750-29	1	71150713	01	57150713	51	33756736	..	87121487	10
1750-30	2	13125	02	55527	52	87718	..	18941	11
1750-31	3	73513	03	41163	53	91010	..	16813	12
1750-32	4	12912	04	37730	54	81931	..	14250	13
1750-33	5	10511	05	30196	55	97715	..	42001	14
1750-34	6	97711	06	07161	56	1750643	..	09478	15
1750-35	7	71052112	07	17191920	57	05121	..	01001	16
1750-36	8	00514	08	23592	58	02917	..	04001	17
1750-37	9	21912	09	71208	59	02617	..	01001	18
1750-38	10	73121	10	41812	60	11811	..	01001	19
1750-39	11	04728	11	50810	61	14310	..	01001	20
1750-40	12	16133	12	10810	62	16810	..	01001	21
1750-41	13	47547	13	23512	63	21134	..	01001	22
1750-42	14	11842	14	10212	64	18141	..	01001	23
1750-43	15	10133	15	01211	65	01001	..	01001	24
1750-44	16	11133	16	17191927	66	17611	..	81611	25
1750-45	17	13130	17	51010	67	10512	..	89101	26
1750-46	18	04192	18	71111	68	11271	..	50891	27
1750-47	19	0993040	19	59017	69	10008	..	78109	28
1750-48	20	87211	20	40017	70	18748	..	78118	29
1750-49	21	72812	21	17111	71	41400	..	73741	30
1750-50	22	70215	22	41018	72	44111	..	71117	31
1750-51	23	61600	23	14709	73	41001	..	68971	32
1750-52	24	51014	24	01181	74	41000	..	61188	33
1750-53	25	44501	25	17091001	75	71618	..	84501	34
1750-54	26	15941	26	80720	76	51177	..	61211	35
1750-55	27	27184	27	80411	77	57711	..	52453	36
1750-56	28	28704	28	18400	78	86017	..	37037	37
1750-57	29	18181	29	40710	79	41102	..	18601	38
1750-58	30	01811	30	18477	80	05016	..	52101	39
1750-59	31	70391035	31	24712	81	61100	..	49800	40
1750-60	32	84418	32	10870	82	71011	..	47504	41
1750-61	33	70116	33	01524	83	71010	..	47117	42
1750-62	34	65113	34	18901009	84	77102	..	44751	43
1750-63	35	58740	35	78196	85	78148	..	40160	44
1750-64	36	50174	36	67184	86	81181	..	37817	45
1750-65	37	41601	37	18172	87	85111	..	35770	46

Grad. 60.

S.M.

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Grad. 29.

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S. M.	Sinus.	D.	Logarith.	D.	Difference	D.	Logarith.	D.	Sinus.
30	49142356	20	75841603	63	56910272	11	13291119	10	87015710
10	46576	19	73035	67	44761	11	82074	10	81117
20	50795	18	24462	68	33650	09	90371	10	75117
30	55014	17	15902	69	22441	10	81501	10	69117
40	59234	16	07336	70	11031	09	72681	10	63117
50	63455	15	70798771	65	56839721	09	63840	10	57117
31	67674	14	90207	64	88111	08	55017	10	51117
10	71895	13	81644	63	72105	07	46117	10	45117
20	76074	12	73011	62	61743	07	37217	10	39117
30	80212	11	64504	61	54472	06	28317	10	33117
40	84347	10	55956	60	45187	05	19417	10	27117
50	88479	9	47402	59	35877	04	10517	10	21117
32	92591	8	38847	58	26577	03	01617	10	15117
10	96701	7	30211	57	17277	02	92717	10	09117
20	1008141	6	21711	56	870170	01	83817	10	03117
30	104927	5	13171	55	77677	00	74917	10	97117
40	109039	4	04631	54	68337	99	66017	10	91117
50	113151	3	10090070	53	59000	98	57117	10	85117
33	117263	2	91511	52	49667	97	48217	10	79117
10	121375	1	82987	51	40337	96	39317	10	73117
20	125487	0	74411	50	31007	95	30417	10	67117
30	129599	9	65811	49	21677	94	21517	10	61117
40	133711	8	57211	48	12347	93	12617	10	55117
50	137823	7	48611	47	03017	92	03717	10	49117
34	141935	6	39987	46	93687	91	94817	10	43117
10	146047	5	31311	45	84357	90	85917	10	37117
20	150159	4	22711	44	75027	89	77017	10	31117
30	154271	3	14111	43	65697	88	68117	10	25117
40	158383	2	05511	42	56367	87	59217	10	19117
50	162495	1	96911	41	47037	86	50317	10	13117
35	166607	0	88311	40	37707	85	41417	10	07117
10	170719	9	79711	39	28377	84	32517	10	01117
20	174831	8	71111	38	19047	83	23617	10	95117
30	178943	7	62511	37	09717	82	14717	10	89117
40	183055	6	53911	36	00387	81	05817	10	83117
50	187167	5	45311	35	91057	80	96917	10	77117
36	191279	4	36711	34	81727	79	88017	10	71117
10	195391	3	28111	33	72397	78	79117	10	65117
20	199503	2	19511	32	63067	77	70217	10	59117
30	203615	1	10911	31	53737	76	61317	10	53117
40	207727	0	02311	30	44407	75	52417	10	47117
50	211839	9	93711	29	35077	74	43517	10	41117

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N. V.	Sine.	B. Logarith.	D. Different.	D. Logarith.	D	Sine.	D
1	120481	1051170	1051170	159844	7	162456	00
2	121401	1051171	1051171	80032	9	47008	10
3	122321	1051172	1051172	81084	11	44702	20
4	123241	1051173	1051173	82136	13	42308	30
5	124161	1051174	1051174	83188	15	39913	40
6	125081	1051175	1051175	84240	17	37517	50
7	126001	1051176	1051176	85292	19	35121	00
8	126921	1051177	1051177	86344	21	32725	10
9	127841	1051178	1051178	87396	23	30329	20
10	128761	1051179	1051179	88448	25	27933	30
11	129681	1051180	1051180	89500	27	25537	40
12	130601	1051181	1051181	90552	29	23141	50
13	131521	1051182	1051182	91604	31	20745	00
14	132441	1051183	1051183	92656	33	18349	10
15	133361	1051184	1051184	93708	35	15953	20
16	134281	1051185	1051185	94760	37	13557	30
17	135201	1051186	1051186	95812	39	11161	40
18	136121	1051187	1051187	96864	41	8765	50
19	137041	1051188	1051188	97916	43	6369	00
20	137961	1051189	1051189	98968	45	3973	10
21	138881	1051190	1051190	100020	47	1577	20
22	139801	1051191	1051191	101072	49	911	30
23	140721	1051192	1051192	102124	51	671	40
24	141641	1051193	1051193	103176	53	431	50
25	142561	1051194	1051194	104228	55	191	00
26	143481	1051195	1051195	105280	57	051	10
27	144401	1051196	1051196	106332	59	011	20
28	145321	1051197	1051197	107384	61	071	30
29	146241	1051198	1051198	108436	63	031	40
30	147161	1051199	1051199	109488	65	091	50
31	148081	1051200	1051200	110540	67	051	00
32	149001	1051201	1051201	111592	69	011	10
33	149921	1051202	1051202	112644	71	071	20
34	150841	1051203	1051203	113696	73	031	30
35	151761	1051204	1051204	114748	75	091	40
36	152681	1051205	1051205	115800	77	051	50
37	153601	1051206	1051206	116852	79	011	00
38	154521	1051207	1051207	117904	81	071	10
39	155441	1051208	1051208	118956	83	031	20
40	156361	1051209	1051209	120008	85	091	30
41	157281	1051210	1051210	121060	87	051	40
42	158201	1051211	1051211	122112	89	011	50
43	159121	1051212	1051212	123164	91	071	00
44	160041	1051213	1051213	124216	93	031	10
45	160961	1051214	1051214	125268	95	091	20
46	161881	1051215	1051215	126320	97	051	30
47	162801	1051216	1051216	127372	99	011	40
48	163721	1051217	1051217	128424	01	071	50
49	164641	1051218	1051218	129476	03	031	00
50	165561	1051219	1051219	130528	05	091	10
51	166481	1051220	1051220	131580	07	051	20
52	167401	1051221	1051221	132632	09	011	30
53	168321	1051222	1051222	133684	11	071	40
54	169241	1051223	1051223	134736	13	031	50
55	170161	1051224	1051224	135788	15	091	00
56	171081	1051225	1051225	136840	17	051	10
57	172001	1051226	1051226	137892	19	011	20
58	172921	1051227	1051227	138944	21	071	30
59	173841	1051228	1051228	139996	23	031	40
60	174761	1051229	1051229	141048	25	091	50
61	175681	1051230	1051230	142100	27	051	00
62	176601	1051231	1051231	143152	29	011	10
63	177521	1051232	1051232	144204	31	071	20
64	178441	1051233	1051233	145256	33	031	30
65	179361	1051234	1051234	146308	35	091	40
66	180281	1051235	1051235	147360	37	051	50
67	181201	1051236	1051236	148412	39	011	00
68	182121	1051237	1051237	149464	41	071	10
69	183041	1051238	1051238	150516	43	031	20
70	183961	1051239	1051239	151568	45	091	30
71	184881	1051240	1051240	152620	47	051	40
72	185801	1051241	1051241	153672	49	011	50
73	186721	1051242	1051242	154724	51	071	00
74	187641	1051243	1051243	155776	53	031	10
75	188561	1051244	1051244	156828	55	091	20
76	189481	1051245	1051245	157880	57	051	30
77	190401	1051246	1051246	158932	59	011	40
78	191321	1051247	1051247	159984	61	071	50
79	192241	1051248	1051248	161036	63	031	00
80	193161	1051249	1051249	162088	65	091	10
81	194081	1051250	1051250	163140	67	051	20
82	195001	1051251	1051251	164192	69	011	30
83	195921	1051252	1051252	165244	71	071	40
84	196841	1051253	1051253	166296	73	031	50
85	197761	1051254	1051254	167348	75	091	00
86	198681	1051255	1051255	168400	77	051	10
87	199601	1051256	1051256	169452	79	011	20
88	200521	1051257	1051257	170504	81	071	30
89	201441	1051258	1051258	171556	83	031	40
90	202361	1051259	1051259	172608	85	091	50
91	203281	1051260	1051260	173660	87	051	00
92	204201	1051261	1051261	174712	89	011	10
93	205121	1051262	1051262	175764	91	071	20
94	206041	1051263	1051263	176816	93	031	30
95	206961	1051264	1051264	177868	95	091	40
96	207881	1051265	1051265	178920	97	051	50
97	208801	1051266	1051266	179972	99	011	00
98	209721	1051267	1051267	181024	01	071	10
99	210641	1051268	1051268	182076	03	031	20
100	211561	1051269	1051269	183128	05	091	30

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M. S.	Sinus.	D.	Logarith.	D.	Difference.	D.	Logarith.	S.	Sinus.
2 0	49549867	411	70127134	99	56141500	14031617	14031617	14031617	14031617
10	50078		18655	99	32241	86887	86887	86887	86887
20	54184		10137	78	20978	80177	80177	80177	80177
30	58500		01640	00	09715	81921	81921	81921	81921
40	62711		70193143	20	5098452	94691	94691	94691	94691
50	66922		84647	36	87184	97451	97451	97451	97451
60	71132	10	76152	44	73028	14031617	14031617	14031617	14031617
70	75344	10	67660	01	64667	02953	02953	02953	02953
80	79552		59163	99	53428	89750	89750	89750	89750
90	83765		50657	01	42140	86546	86546	86546	86546
100	87977		41181	01	30857	81207	81207	81207	81207
110	92183		32694	00	19672	74899	74899	74899	74899
120	96393		25107	01	08471	67573	67573	67573	67573
130	100603		18711	00	00071	59214	59214	59214	59214
140	104813		05432	01	9185	50875	50875	50875	50875
150	109022	20	000774	05	74901	42544	42544	42544	42544
160	113232	40	98203	04	66549	34207	34207	34207	34207
170	117441	39	82778	01	58205	25861	25861	25861	25861
180	121650		74255	01	49861	17517	17517	17517	17517
190	125856		65812	01	41515	9203	9203	9203	9203
200	130068		57372	00	33173	0365	0365	0365	0365
210	134277		48932	00	24830	0530	0530	0530	0530
220	138481		40492	00	16487	0695	0695	0695	0695
230	142689		32052	00	8251	0860	0860	0860	0860
240	146893		23612	00	0000	1025	1025	1025	1025
250	151097		15172	00	0000	1190	1190	1190	1190
260	155301		06732	00	0000	1355	1355	1355	1355
270	159505		0000	00	0000	1520	1520	1520	1520
280	163709		0000	00	0000	1685	1685	1685	1685
290	167913		0000	00	0000	1850	1850	1850	1850
300	172117		0000	00	0000	2015	2015	2015	2015
310	176321		0000	00	0000	2180	2180	2180	2180
320	180525		0000	00	0000	2345	2345	2345	2345
330	184729		0000	00	0000	2510	2510	2510	2510
340	188933		0000	00	0000	2675	2675	2675	2675
350	193137		0000	00	0000	2840	2840	2840	2840
360	197341		0000	00	0000	3005	3005	3005	3005
370	201545		0000	00	0000	3170	3170	3170	3170
380	205749		0000	00	0000	3335	3335	3335	3335
390	209953		0000	00	0000	3500	3500	3500	3500
400	214157		0000	00	0000	3665	3665	3665	3665
410	218361		0000	00	0000	3830	3830	3830	3830
420	222565		0000	00	0000	3995	3995	3995	3995
430	226769		0000	00	0000	4160	4160	4160	4160
440	230973		0000	00	0000	4325	4325	4325	4325
450	235177		0000	00	0000	4490	4490	4490	4490
460	239381		0000	00	0000	4655	4655	4655	4655
470	243585		0000	00	0000	4820	4820	4820	4820
480	247789		0000	00	0000	4985	4985	4985	4985
490	251993		0000	00	0000	5150	5150	5150	5150
500	256197		0000	00	0000	5315	5315	5315	5315
510	260401		0000	00	0000	5480	5480	5480	5480
520	264605		0000	00	0000	5645	5645	5645	5645
530	268809		0000	00	0000	5810	5810	5810	5810
540	273013		0000	00	0000	5975	5975	5975	5975
550	277217		0000	00	0000	6140	6140	6140	6140
560	281421		0000	00	0000	6305	6305	6305	6305
570	285625		0000	00	0000	6470	6470	6470	6470
580	289829		0000	00	0000	6635	6635	6635	6635
590	294033		0000	00	0000	6800	6800	6800	6800
600	298237		0000	00	0000	6965	6965	6965	6965
610	302441		0000	00	0000	7130	7130	7130	7130
620	306645		0000	00	0000	7295	7295	7295	7295
630	310849		0000	00	0000	7460	7460	7460	7460
640	315053		0000	00	0000	7625	7625	7625	7625
650	319257		0000	00	0000	7790	7790	7790	7790
660	323461		0000	00	0000	7955	7955	7955	7955
670	327665		0000	00	0000	8120	8120	8120	8120
680	331869		0000	00	0000	8285	8285	8285	8285
690	336073		0000	00	0000	8450	8450	8450	8450
700	340277		0000	00	0000	8615	8615	8615	8615
710	344481		0000	00	0000	8780	8780	8780	8780
720	348685		0000	00	0000	8945	8945	8945	8945
730	352889		0000	00	0000	9110	9110	9110	9110
740	357093		0000	00	0000	9275	9275	9275	9275
750	361297		0000	00	0000	9440	9440	9440	9440
760	365501		0000	00	0000	9605	9605	9605	9605
770	369705		0000	00	0000	9770	9770	9770	9770
780	373909		0000	00	0000	9935	9935	9935	9935
790	378113		0000	00	0000	10000	10000	10000	10000
800	382317		0000	00	0000				

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S.M.

Grad. 29.

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M. S.	Sinus.	D	Logarithm.	D	Difference.	D	Logarithm.	D	S
54	402417	01	89017011	01	15210021	01	14-2335	01	10000
55	403177	01	89017011	01	15210021	01	14-2335	01	10000
56	403937	01	89017011	01	15210021	01	14-2335	01	10000
57	404697	01	89017011	01	15210021	01	14-2335	01	10000
58	405457	01	89017011	01	15210021	01	14-2335	01	10000
59	406217	01	89017011	01	15210021	01	14-2335	01	10000
60	406977	01	89017011	01	15210021	01	14-2335	01	10000
61	407737	01	89017011	01	15210021	01	14-2335	01	10000
62	408497	01	89017011	01	15210021	01	14-2335	01	10000
63	409257	01	89017011	01	15210021	01	14-2335	01	10000
64	410017	01	89017011	01	15210021	01	14-2335	01	10000
65	410777	01	89017011	01	15210021	01	14-2335	01	10000
66	411537	01	89017011	01	15210021	01	14-2335	01	10000
67	412297	01	89017011	01	15210021	01	14-2335	01	10000
68	413057	01	89017011	01	15210021	01	14-2335	01	10000
69	413817	01	89017011	01	15210021	01	14-2335	01	10000
70	414577	01	89017011	01	15210021	01	14-2335	01	10000
71	415337	01	89017011	01	15210021	01	14-2335	01	10000
72	416097	01	89017011	01	15210021	01	14-2335	01	10000
73	416857	01	89017011	01	15210021	01	14-2335	01	10000
74	417617	01	89017011	01	15210021	01	14-2335	01	10000
75	418377	01	89017011	01	15210021	01	14-2335	01	10000
76	419137	01	89017011	01	15210021	01	14-2335	01	10000
77	419897	01	89017011	01	15210021	01	14-2335	01	10000
78	420657	01	89017011	01	15210021	01	14-2335	01	10000
79	421417	01	89017011	01	15210021	01	14-2335	01	10000
80	422177	01	89017011	01	15210021	01	14-2335	01	10000
81	422937	01	89017011	01	15210021	01	14-2335	01	10000
82	423697	01	89017011	01	15210021	01	14-2335	01	10000
83	424457	01	89017011	01	15210021	01	14-2335	01	10000
84	425217	01	89017011	01	15210021	01	14-2335	01	10000
85	425977	01	89017011	01	15210021	01	14-2335	01	10000
86	426737	01	89017011	01	15210021	01	14-2335	01	10000
87	427497	01	89017011	01	15210021	01	14-2335	01	10000
88	428257	01	89017011	01	15210021	01	14-2335	01	10000
89	429017	01	89017011	01	15210021	01	14-2335	01	10000
90	429777	01	89017011	01	15210021	01	14-2335	01	10000
91	430537	01	89017011	01	15210021	01	14-2335	01	10000
92	431297	01	89017011	01	15210021	01	14-2335	01	10000
93	432057	01	89017011	01	15210021	01	14-2335	01	10000
94	432817	01	89017011	01	15210021	01	14-2335	01	10000
95	433577	01	89017011	01	15210021	01	14-2335	01	10000
96	434337	01	89017011	01	15210021	01	14-2335	01	10000
97	435097	01	89017011	01	15210021	01	14-2335	01	10000
98	435857	01	89017011	01	15210021	01	14-2335	01	10000
99	436617	01	89017011	01	15210021	01	14-2335	01	10000
100	437377	01	89017011	01	15210021	01	14-2335	01	10000

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Sinus.	D.	Logarith. D.	Different. D.	Logarith. D.	Sinus	D.
100000	99	0937473	1441004	1432430	5000114	60
99990	98	09351	14417	26904	00115	14
99980	97	0932798	14425	85703	86597692	40
99970	96	80550	14697647	91501	95267	30
99960	95	81136	85553	91501	92842	20
99950	94	71743	78020	92103	90417	10
99940	93	64211	5142	14400004	87902	059
99930	92	55900	50551	03701	85567	50
99920	91	47570	41064	085006	83141	40
99910	90	39131	31573	09308	80716	30
99900	89	30792	22082	12110	78290	20
99890	88	22401	12491	14912	75863	10
99880	87	14010	147404	17715	73437	058
99870	86	05619	51338	20518	71010	50
99860	85	07228	73928	23321	68583	40
99850	84	08830	01243	26123	66156	30
99840	83	00481	51314	28929	63729	20
99830	82	02101	40362	31733	61302	10
99820	81	03720	29181	34538	58874	057
99810	80	05339	17707	37342	56447	50
99800	79	06958	06117	40146	54020	40
99790	78	08577	0509010	42951	51593	30
99780	77	10196	04071	45755	49166	20
99770	76	11815	03055	48559	46739	10
99760	75	13434	02039	51372	44312	056
99750	74	01053	01020	54176	41885	50
99740	73	0006704	39720	56980	39458	40
99730	72	08633	28541	59784	37031	30
99720	71	10252	17362	62588	34604	20
99710	70	01871	06183	65403	32177	10
99700	69	03490	5495007	68217	29750	055
99690	68	05109	87540	71021	27323	50
99680	67	06728	74652	73825	24896	40
99670	66	08347	61470	76629	22469	30
99660	65	10000	50201	79434	20042	20
99650	64	11619	38921	82238	17615	10
99640	63	13238	27631	85042	15188	054

Grad. 30.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Different.
6 0	5051074	4194	69015027	61	51527952	71	51527952	71	51527952
10	552665		046113	62	16779	72	16779	72	16779
20	55462		68990301	63	05606	73	05606	73	05606
30	63656		87940	64	4494434	74	4494434	74	4494434
40	67850		75579	65	83561	75	83561	75	83561
50	72044		71219	66	72069	76	72069	76	72069
7 0	70238	93	62661	67	60919	77	60919	77	60919
10	80431	94	54104	68	41742	78	41742	78	41742
20	84621	93	46148	69	28182	79	28182	79	28182
30	88818	94	37793	70	27423	80	27423	80	27423
40	93012	93	29438	71	16245	81	16245	81	16245
50	97205	93	21084	72	05077	82	05077	82	05077
8 0	50201398		12731	73	54391910	83	54391910	83	54391910
10	05591	92	04379	74	82743	84	82743	84	82743
20	09785	93	68896028	75	72573	85	72573	85	72573
30	13976		87678	76	60411	86	60411	86	60411
40	18169	91	79329	77	49245	87	49245	87	49245
50	12361	91	70981	78	38085	88	38085	88	38085
9 0	26553	93	62634	79	26922	89	26922	89	26922
10	30746	92	54288	80	15754	90	15754	90	15754
20	34938	93	45943	81	04593	91	04593	91	04593
30	39130	91	37599	82	74693437	92	74693437	92	74693437
40	43322	92	29255	83	63526	93	63526	93	63526
50	47513	91	20912	84	52354	94	52354	94	52354
10 0	51705	91	12570	85	41182	95	41182	95	41182
10	55896	9	04224	86	30010	96	30010	96	30010
20	60088	91	62795887	87	18838	97	18838	97	18838
30	64279		87510	88	07666	98	07666	98	07666
40	68470		70212	89	96494	99	96494	99	96494
50	72661		52875	90	85322	100	85322	100	85322
11 0	76852		40539	91	74150		74150		74150
10	81043	90	34204	92	62978		62978		62978
20	85234	91	27870	93	51806		51806		51806
30	89425	91	17537	94	40634		40634		40634
40	93616	90	07204	95	29462		29462		29462
50	97807	91	96872	96	18290		18290		18290
12 0	1019981		85483	97	07118		07118		07118

Grad. 30.

Grad. 30.

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S.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
1	96301995	41	68712542	29	54126089	51	14586453	21	86427480	60	
2	06185	40	04213	28	14938	50	89275	20	15041	50	
3	10375	40	68695885	27	03788	49	91097	19	22602	40	
4	14565	89	87558	26	54092638	48	94920	18	20163	30	
5	18754	90	79231	25	81489	47	97742	17	17724	20	
6	22944	89	70909	24	70340	46	14600565	16	15284	10	
7	27133	90	62580	23	59192	45	03388	15	12844	0	47
8	31323	89	54256	22	48044	44	06112	14	10404	50	
9	35512	88	45933	21	36897	43	02036	13	07964	40	
10	39701	87	37611	20	25751	42	11860	12	05524	30	
11	43890	86	29291	19	14606	41	14685	11	03083	20	
12	48079	85	20971	18	03462	40	17509	10	00642	10	
13	52268	84	12652	17	5399218	39	20334	9	86398201	0	46
14	56456	83	04334	16	81174	38	23160	8	95760	50	
15	60645	82	68596017	15	70032	37	25985	7	93318	40	
16	64833	81	87701	14	58892	36	28811	6	90877	30	
17	69021	80	79385	13	47747	35	31638	5	88435	20	
18	73210	79	71070	12	36605	34	34465	4	85993	10	
19	77398	78	62757	11	25465	33	37192	3	83551	0	45
20	81586	77	54444	10	14325	32	40119	2	81108	50	
21	85773	76	46132	9	03185	31	42947	1	78665	40	
22	89961	75	37821	8	53892046	30	45776	0	76222	30	
23	94149	74	29511	7	80907	29	48604	59	73779	20	
24	98336	73	21202	6	69769	28	51433	58	71336	10	
25	10402524	72	12894	5	58632	27	54262	57	68893	0	44
26	06711	71	04587	4	47495	26	57092	56	66449	50	
27	10898	70	68496281	3	36360	25	59921	55	64005	40	
28	15085	69	87976	2	25225	24	62751	54	61561	30	
29	19272	68	79671	1	14090	23	65581	53	59117	20	
30	23458	67	71367	0	02955	22	68412	52	56672	10	
31	27645	66	63065	59	53791822	21	71243	51	54228	0	43
32	31832	65	54763	58	80688	20	74075	50	51783	50	
33	36018	64	46462	57	69556	19	76906	49	49338	40	
34	40204	63	38163	56	58425	18	79738	48	46892	30	
35	44390	62	29864	55	47294	17	82570	47	44447	20	
36	48576	61	21566	54	36164	16	85402	46	42001	10	
37	52762	60	13269	53	25034	15	88235	45	39555	0	42

Grad. 59.

S.M.

Qq

Grad. 30.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	50451281	86	68413169	96	53725034	29	14688135	33	86339595	60
10	56948		04973	95	83905		91068	33	37100	50
20	61134		68396678	95	02776		93902	33	34661	40
30	65319	85	88384	96	53691648	11	96736	34	32216	30
40	69505	86	80090	96	80510	11	99570	35	29769	20
50	73690	87	71797	93	69392	11	14702405	35	27322	10
19 0	77875	88	63506	91	58267	25	05239	35	24875	00
10	82060		55215	90	47141	26	08074	36	22422	50
20	86245		46925	88	36015	23	10910	35	19980	40
30	90430		38637		24891	23	13745	36	17531	30
40	94615		30349	87	13768	23	16581	37	15085	20
50	98800		22062	86	01645		19417	37	12637	10
20 0	50501984	84	13776	85	53591522	21	22254	38	10182	00
10	07169	85	05491	84	80400		25091	38	07747	50
20	11353	84	68297107	83	69278	20	27929	37	05291	40
30	15537		88914		58158	21	30766	35	02841	30
40	19721		80641	81	47037	19	53604		00391	20
50	23905		72360	80	35918	18	36442	39	86297941	10
21 0	28089	83	64080		24800	19	39280	39	95494	00
10	32272	84	55800	78	13681	17	42115		93044	50
20	36456	83	47122	77	02564	16	44958		90594	40
30	40639	84	39245		53491448	17	47797	40	88144	30
40	44823	83	30968	76	80331	16	50635		85694	20
50	49006	83	22692	75	69215		53475	41	83243	10
22 0	53189		14417	74	58099	15	56312		80792	00
10	57372		06143	73	46984	14	59155		78341	50
20	61555		68197870	72	35870		62000	42	75890	40
30	65737	81	89598		24756	13	64842	41	73438	30
40	69920	82	81326	70	13643	12	67683	42	70987	20
50	74103	83	73056	69	02531	11	70525		68535	10
23 0	78285	82	64787		53391410	12	73367	43	66083	00
10	82467		56518	68	80308	11	76210		63631	50
20	86649		48250	66	69197	10	79051	44	61179	40
30	90831		39984		58087	09	81895	43	58726	30
40	95013		31718	65	46978		84740	44	56273	20
50	99195		23453	64	35869	08	87584		53820	10
24 0	50603376	81	15189		24761		90428		51367	00

Grad. 50.

Grad. 30.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
24 0	50603376	81	68115189	63	53324761	1107	14790428	44	86251367	60
10	07558	81	06926	62	13654	1107	93272	44	48914	53
20	11739	81	68098664	62	02547	1107	96117	45	46460	40
30	15921	81	90403	58	53291441	06	98962	46	44006	30
40	20102	81	82142	60	80334	06	14801808	47	41552	20
50	24283	81	73882	58	69228	04	04654	48	39098	10
25 0	28464	80	65624	57	58124	05	07500	47	36643	54
10	32645	81	57366	55	47019	04	10347	48	34189	50
20	36825	81	49109	54	35915	03	13194	47	31734	40
30	41006	81	40854	53	24813	01	16041	48	29279	30
40	45186	81	32593	52	13710	01	18889	47	26824	20
50	49367	80	24345	51	02609	20	21736	48	24368	10
26 0	53547	79	16092	50	53191508	1009	24584	49	21912	53
10	57727	79	07840	49	80408	96	27432	50	19457	50
20	61907	79	67999589	47	69302	94	30281	51	17001	40
30	66087	79	91335	46	58205	91	33130	52	14544	30
40	70267	78	83089	45	47110	92	35979	53	12088	20
50	74446	78	74840	44	36011	90	38829	54	09631	10
27 0	78626	77	66593	43	24916	88	41679	55	07174	033
10	82805	77	58346	42	13816	87	44530	56	04717	50
20	86984	77	50100	41	02720	86	47380	57	02260	40
30	91163	77	41856	40	53091625	85	50231	58	86199892	30
40	95342	77	33612	39	80530	84	53081	59	97345	20
50	99521	77	25369	38	69436	83	55933	60	94887	10
28 0	50703700	76	47127	37	58342	82	58785	61	92429	032
10	07879	76	08886	36	47245	81	61637	62	89971	50
20	12057	76	00646	35	36156	80	64490	63	87512	40
30	16236	76	67892407	34	25061	79	67342	64	85053	30
40	20414	76	81458	33	13973	78	70195	65	82594	20
50	24592	76	75931	32	02883	77	73048	66	80135	10
29 0	28770	75	67695	31	52991793	76	75902	67	77676	031
10	32948	75	59460	30	80704	75	78756	68	75217	50
20	37126	75	51216	29	69616	74	81610	69	72757	40
30	41304	75	42993	28	58528	73	84465	70	70297	30
40	45481	75	34760	27	47440	72	87320	71	67837	20
50	49659	75	26528	26	36353	71	90175	72	65377	10
60	53836	75	18297	25	25266	70	93031	73	62916	030

Grad. 59.

S.M.

Grad. 30.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
30 0	50753836		67818297		52925266	86	14893031		86162916	
10	58014	78	10067	30	14180		95887	56	60455	80
20	62191	77	01838	29	03094		98744	57	57954	80
				82288		84		56		
30	66368		67793610		52892010	85	14901600		55553	80
40	70545		85382		80925	83	04457		53072	80
50	74721	76	77156	26	69842	82	07314	4857	50660	80
						25				
31 0	78898	77	68931		58760	83	10171		48144	80
10	83074	76	60706		47677	82	13029	58	45017	80
20	87251	77	52482	24	36595	80	15887		43245	80
				22		81				
30	91427	4176	44260		25515	81	18745		40742	80
40	95603		36038		14434	80	21604	59	38500	80
50	99779		27817	21	03354		24463	60	35875	80
				20						
32 0	50803955		19597		52792274	79	27323		33374	80
10	08131		11378	19	81195	78	30183		30911	80
20	12307	75	03160	18	70117		33043		28442	80
				17				61		
30	16482	76	67694943		59039	77	35904	60	25940	80
40	20658	75	86726	16	47962		38764	61	23520	80
50	24833		78510	15	36885	76	41625		21050	80
				14						
33 0	29008		70295		25809		44482	62	18592	80
10	33183		62081	12	14733	74	47348		16122	80
20	37358		53869	11	03659	75	50210	63	13663	80
				10						
30	41533		45657		52692584	75	53073	62	11192	80
40	45708		37446	10	81511		55935	63	08755	80
50	49883	74	29236	09	70438	71	58798		06161	80
				08						
34 0	54057		21027		59366		61661	64	03802	80
10	58231	75	12819	07	48294	71	64525		01237	80
20	62406	74	04612	06	37223		67385		86098	80
30	66520		67596406		26153	70	70253	65	95406	80
40	70754		88200	05	15082	71	73118	64	93919	80
50	74928	73	79995	03	04013	69	75982		91473	80
35 0	79101	74	71792		52592945	110600	78847	65	89000	80
10	83275	74	63589	02	81877		81712	66	86540	80
20	87449	73	55387	00	70809		84578		84075	80
30	91622		47187		59743	66	87444		81606	80
40	95795	74	38987	8196	48677		90310	67	79138	80
50	99969	73	30788		37611	65	93177		76672	80
60	50904142		22590		26546		96044		74503	80

Grad. 59.

Grad. 30.

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Alt. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
36 0	50904142	73	67522590	97	52526546	64	14996044	67	86074203	68	60
10	08315	71	14393	96	15482	64	98911	67	71735	69	50
20	12487	72	06197	96	04418	64	15001779	67	69266	69	40
30	16660	73	67498002	96	52493355	106	04647	69	66798	68	30
40	20833	72	89807	94	82129	106	07515	69	64329	69	20
50	25005	72	81613	93	71229	62	10384	69	61861	68	10
47 0	29177	73	73420	92	60167	60	13253	70	59392	70	023
10	33350	73	65228	91	49105	60	16123	69	56922	69	50
20	37522	72	57037	90	38045	59	18992	70	54453	70	40
30	41694	71	48847	89	26985	58	21862	71	51983	70	30
40	45866	72	40658	88	15926	58	24732	71	49514	69	20
50	50037	72	32470	87	04868	57	27602	71	47044	70	10
38 0	54209	71	24282	86	52393809	58	30473	72	44573	71	022
10	58380	71	16095	86	82751	56	33344	72	42103	70	50
20	62552	71	07909	84	71693	56	36216	72	39632	71	40
30	66723	70	67399725	83	60637	54	39088	73	37161	71	30
40	70894	70	91541	82	49582	54	41960	73	34690	70	20
50	75065	70	83358	81	38525	53	44833	73	32219	70	10
39 0	79236	70	75176	80	27471	53	47705	74	29748	71	021
10	83407	70	66995	79	16417	51	50578	75	27276	72	50
20	87578	70	58815	77	05364	51	53451	75	24804	72	40
30	91748	70	50636	76	52294311	50	56325	76	22332	73	30
40	95918	70	42457	75	83258	49	59199	76	19860	73	20
50	1000089	70	34280	74	72207	49	62073	76	17387	72	10
40 0	04259	69	26104	73	61156	48	64948	77	14915	72	020
10	08420	69	17929	72	50106	47	67823	77	12442	71	50
20	12599	69	09755	71	39056	47	70699	77	09969	71	40
30	16769	69	01581	70	28007	46	73574	78	07496	70	30
40	20939	69	67293408	69	16958	46	76450	78	05022	69	20
50	25108	69	85236	68	05910	45	79326	78	02548	69	10
41 0	29278	69	77065	67	52194863	45	82202	79	00075	73	019
10	33447	69	68895	66	83816	44	85079	79	85997601	74	50
20	37616	69	60726	65	72770	44	87956	79	95126	74	40
30	41785	69	52558	64	61725	43	90833	79	92652	74	30
40	45954	69	44390	63	50679	42	93711	79	90177	73	20
50	50123	69	36223	62	39634	41	96589	79	87702	73	10
60	44292	69	28058	61	28550	40	99468	79	85227	72	018

Grad. 59.

S.M.

Q9 3

Grad. 50.

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L. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
2 0	51054393	68	67228058	65	52128590	44	15099468	79	85985227	60
10	58460	69	19893	64	17746	44	15102347	80	82751	50
20	62629	68	11729	63	06501	42	05227	79	80276	40
30	66797	69	03566	62	51095460	42	08106	79	77801	30
40	70966	67	67195404	61	84418	41	10986	80	75324	20
50	75134	68	87243	60	73377	40	13866	81	72849	10
3 0	79302	69	79083	59	62337	39	16746	81	70372	0
10	83470	67	70924	58	51297	39	19627	82	67896	50
20	87637	68	62766	57	40253	40	22508	82	65429	40
30	91805	67	54608	56	29218	38	25390	83	62942	30
40	95973	68	46451	55	18180	38	28271	84	60465	20
50	51100140	67	38295	54	07142	37	31153	85	57981	10
4 0	04307	68	30140	53	51996105	36	34035	86	55514	0
10	08475	67	21986	52	85068	36	36918	87	53037	50
20	12642	66	13833	51	74032	35	39801	88	50555	40
30	16809	67	05681	50	62997	34	42684	89	48077	30
40	20975	66	67097529	49	51961	34	45568	90	45598	20
50	25142	65	89378	48	40927	33	48451	91	43120	10
5 0	29309	66	81229	47	29894	32	51335	92	40641	0
10	33475	67	73080	46	18861	31	54219	93	38162	50
20	37643	66	64932	45	07828	31	57104	94	35683	40
30	41808	65	50786	44	51896797	30	59989	95	33204	30
40	45974	64	42640	43	85765	29	62875	96	30724	20
50	50140	63	40495	42	74734	28	65761	97	28245	10
6 0	54306	65	32352	41	63705	27	68647	98	25765	0
10	58471	66	24209	40	52675	26	71534	99	23284	50
20	62637	65	16067	39	41647	25	74420	100	20804	40
30	66801	64	07926	38	30619	24	77307	101	18324	30
40	70966	63	66999785	37	19591	23	80194	102	15844	20
50	75133	62	91645	36	08563	22	83082	103	13362	10
7 0	79298	61	83507	35	51797537	21	85970	104	10881	0
10	83463	60	75369	34	86510	20	88859	105	08399	50
20	87628	59	67232	33	75485	19	91747	106	05918	40
30	91793	58	59096	32	64460	18	94636	107	03436	30
40	95958	57	50962	31	53436	17	97525	108	00954	20
50	51100139	56	42827	30	42413	16	51200414	109	85898472	10
60	04286	55	34694	29	31390	15	03304	110	95990	0

Grad. 59.

S.M.

Grad. 30.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48 0	51204286	65	66934694		51731390	23	15203304	90	85895990	60
10	08451	64	26561	33	30367	22	06194	1891	93507	50
20	12615		18430	31	09345	10	09085	1891	91024	40
30	16779		10300	30	51698324	10	11976	1891	88541	30
40	20943		02170	29	87303	10	14867	1891	86058	20
50	25107	63	66894041	28	76282	19	17759	1891	83575	10
49 0	29270	64	85913	27	65163	18	20650	1891	81091	0
10	33434	63	77786	26	54144	17	23542	1891	78608	11
20	37597	64	69660	25	43216	16	26434	1891	76114	0
30	41761	64	61535	24	32208	15	29327	1891	73639	30
40	45924	4163	53410	23	21190	14	32220	1891	71155	20
50	50087	63	45286	22	10172	13	35114	1891	68670	10
50 0	54250		37164	21	51599156	16	38008	1891	66186	0
10	58413		29042	20	88140	15	40902	1891	63701	10
20	62576	62	20921	19	77124	14	43797	1891	61216	0
30	66738	63	12802	18	66111	13	46691	1891	58730	30
40	70901	62	04683	17	55097	12	49586	1891	56245	20
50	75063	61	66796565	16	44084	11	52481	1891	53759	10
51 0	79225	63	88448	15	33071	10	55377	1891	51273	0
10	83388	62	80331	14	22059	9	58273	1891	48787	9
20	87550	61	72217	13	11047	8	61170	1891	46300	0
30	91711	61	64103	12	00037	7	64066	1891	43814	30
40	95873	61	55989	11	51489026	6	66963	1891	41327	20
50	51300035	61	47876	10	78016	5	69860	1891	38840	10
52 0	04196	62	39764	9	67006	4	72758	1891	36353	0
10	08358	61	31653	8	55997	3	75656	1891	33865	8
20	12519		23543	7	44988	2	78555	1891	31378	0
30	16680		15434	6	33981	1	81453	1891	28890	30
40	20841		07325	5	22973	0	84351	1891	26402	20
50	25002		66699218	4	11967	0	87251	1891	23914	10
53 0	29163	60	91112	3	00962	0	90150	1891	21425	0
10	33324	61	83006	2	51389956	0	93050	1891	18937	7
20	37484	61	74901	1	78951	0	95950	1891	16448	0
30	41645	60	66798	0	67948	0	98850	1891	13959	30
40	45805		58695	0	56944	0	15301751	1891	11470	20
50	49965		50593	0	45941	0	04652	1891	08980	10
60	54125		42492	0	34938	0	07554	1891	06491	0

Grad. 59.

S. M.

Grad. 30.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54° 0'	51354125	160	66642492	160	51334938	11001	15307554	01	85806491	160
10'	58285		34393	090	23937		10456	02	04001	50
20'	62445		26294		12936		13358	03	01511	40
30'	66605		18195	98	01934		16261	04	85799021	30
40'	70764	59	10097	97	51290934	00	19163	05	96530	20
50'	74924	60	02000	96	79934		22066	06	94039	10
55° 0'	79083	59	66593904	95	68935	10999	24969	07	91349	05
10'	83242		85809	94	57936		27873	08	89055	50
20'	87401		77715	93	46938	97	30777	09	86586	40
30'	91560		69622		35941	98	33681	10	84075	30
40'	95719		61529	91	24943	95	36586	01	81583	20
50'	99878		53438	90	13948		39490	02	79091	10
56° 0'	10404037	58	45348	89	02953	93	42395	03	76599	05
10'	08195	59	37258	88	51191958	94	45300	04	74107	50
20'	12354	58	29169	87	80963	93	48206	05	71615	40
30'	16512		21082		69970	94	51112	06	69122	30
40'	20670		12995	86	58976	93	54019	07	66629	20
50'	24828		04909	85	47983	92	56926	08	64131	10
57° 0'	28986		66496824	84	36991		59833	09	61643	05
10'	33144	57	88740	83	25999	91	62741	10	59150	50
20'	37301	58	20657	82	15008	90	65649	01	56656	40
30'	41459	57	72575		04018	91	68557	02	54162	30
40'	45616	58	64493	81	5109307	89	71466	03	51668	20
50'	49774	57	56412	80	82038		74374	04	49174	10
58° 0'	53931		48337	79	72049	88	77283	05	46675	05
10'	58088		40253	78	60061		80192	06	44183	50
20'	62245		32175	77	49073	87	83102	07	41690	40
30'	66402	56	24098		38086		86012	08	39195	30
40'	70558	57	16021	75	27099	86	88922	09	36695	20
50'	74715	56	07946	74	26113	85	91833	10	34202	10
59° 0'	78871	57	66399872		05128	86	94744	01	32701	05
10'	83028	56	91798	73	50994142	84	97656	02	30212	50
20'	87184		83715	71	83158	83	15400567	03	26716	40
30'	91240		75654		72175		03479	04	24220	30
40'	95496		67583	70	62192	82	06391	05	21724	20
50'	99652		59513	69	50210		09303	06	19227	10
60'	103807	55	51444		39221		12216	07	16730	05

Grad. 59.

18. 11

Grad. 31.

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Sinns.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinns.	D.
1503807	56	66351444	68	50939228	81	15412216	13	85716730	60
07963		43376	67	28247		15129		14233	50
12119		35309		17267	10000	18042		11736	40
18174	4155	27243	66	06287	00000	20956	14	09238	30
20419		19177	65	50895307		23370		06741	20
24584		11112	65	84327	79	26785	15	04243	10
38739		03048	64	73348		29700	16	01745	99 059
32894		66294985	63	62369	77	31616	15	85699246	80
37047		86922	63	51392		35531		96748	40
41204	54	78862		40415		38447	216	94249	30
41358		70801	59	29438	75	41363	16	91750	20
49512		62742	58	18463		44279	17	89251	10
53667	55	54684		07481		47196		86752	058
57821		46626	57	10790515		50113	18	84253	50
61975		37554	51	85535	72	53031	18	81753	40
66129		30514		74564	73	55948	17	79253	30
70283		22454	54	63593		58866	18	76753	20
74436	52	14405	53	52621	72	61784	19	74252	10
78590	54	06352	52	41649	71	64703		71752	057
82743	53	56108300	51	30678		67622	20	69251	50
86897	53	40245	50	19707	69	70542	19	66750	40
91050		32197		08738	70	73461	20	64249	30
95203		74144	49	50697768	69	76381		61748	20
99255		66100	48	86709		79301	21	59246	10
106055	51	58054	47	75830	68	82222		56745	056
07661	53	50005	46	64862		85143	22	54243	50
11218	54	41959	45	53894	66	88065	21	51741	40
15966	52	33914		42928	67	90986		49238	30
20119	51	25869	44	31961	66	93908	22	46736	20
24271		17825	43	20995		96830	23	44233	10
28423		09782	42	10029	65	99753		41730	055
32575		01740	41	50599064		15502676	24	39227	50
36727	51	66093699	40	88099	63	05600	23	36724	40
40878	52	85654	39	77136		08523	24	34220	30
45030		77620	38	66173	62	11447		31717	20
49182		69582	37	55211	61	14371		29213	10
53333	51	61545		44250		17295		26708	054

Grad. 58.

S. M.

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Grad. 31.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D	Logarith.	D.	Sinus.	D.
0	51653333		66061545		50544250	15517295	35616708			
10	57484	4151	53508	37	33288	20210	34504			
20	61635		45473	35	22218	25145	32960			
30	65786		37439	30	11368	26071	30781			
40	69937		29405	24	00409	28996	28305			
50	74088		21372	33	50489450	31922	24182			
60	78239	50	13340	31	78492	34848	21071			
70	82389		05309	30	67534	37775	17172			
80	86539	51	65297279	29	56577	40702	12273			
90	90690		89250	28	45621	43629	08374			
0	94841	50	81221	26	34664	46557	04475			
10	98991		73197	26	23709	49484	00576			
20	51703141	49	65167	25	12755	52412	96677			
30	07290		57141	24	01801	55340	92778			
40	11439	50	49126	23	50390847	58269	88839			
50	15580		41092	22	75894	61198	84900			
60	19738	49	33069	21	48842	64128	80961			
70	23888		25046	20	57988	67058	77022			
80	28037	50	17025	19	47037	69988	73083			
90	32186		09004	18	36085	72918	69144			
0	36335	48	00984	17	25134	75850	65205			
10	40483		65892966	16	14185	78781	61266			
20	44632	47	84948	15	03235	81713	57327			
30	48781		74931	14	107229	84644	53388			
40	52930	46	68915	13	84337	87571	49449			
50	57077		60950	12	70382	90502	45510			
60	61226	45	52826	11	56425	93441	41571			
70	65374		44572	10	42468	96374	37632			
80	69521	44	36257	9	37513	99307	33693			
90	73669		28147	8	26605	102244	29754			
0	77817	43	20816	7	15610	105171	25815			
10	81965		12827	6	04715	108102	21876			
20	86112	42	04817	5	10192771	111033	17937			
30	90260		55716807	4	85253	113964	14000			
40	94408	41	88227	3	74385	116895	10061			
50	98556		80739	2	63463	119826	06122			
60		40	72851	1	52541	122757	02183			
70				0	41619	125688	98244			

TABLE 5.

Grad. 31.

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Min.	Sinus.	D.	Logarithm.	D.	Different.	D.	Logarithm.	D.	Sinus.	D.
0	51802701		65777789		58130003		15622787		85536416	
10	06848	47	64784	300	39060	42	25724	37	33914	50
20	10995		56780	03	28120	40	28660	36	31403	10
30	15141		48777	02	27189	39	27194	35	28851	0
40	19288		40775	01	06243		34544		26379	
50	23434		32774	00	50095303		32471		23860	
60	27580	9	24774	99	84781		40409	19	21354	047
70	31726		16775	98	73427		43340	18	18841	50
80	35872		08777	97	62491	36	46280		16321	40
90	40018		00779	96	51554	37	49225	19	13813	30
100	44164		65692782	95	40618	36	52164		11303	20
110	48310		84786	94	29683	35	55103		08785	10
120	52455	45	76790	93	18747	34	58041	41	06274	046
130	56601	46	68795	92	07812	33	60979		03760	50
140	60746	45	60802	91	49096875	32	63916		01246	40
150	64891		52810	90	85941	31	66854	4	85498732	30
160	69036		44818	89	75013	30	69805	41	96217	20
170	73181		36827	88	6408	29	72746		93702	10
180	77326	44	28837	87	5314	28	75688	42	91187	045
190	81470	45	20848	86	42218	27	78630		88672	50
200	85615	44	12860	85	31254	26	81574	43	86157	40
210	89759	45	04873	84	20358	25	84515		83641	30
220	93904	44	65596886	83	09428	24	87458	44	81125	20
230	98048		88900	82	49898498	23	90402		78609	10
240	1001192		80916	81	87570	22	93346	45	76093	041
250	06336		72932	80	76641	21	96291	44	73575	50
260	10480		64949	79	65714	20	99235	45	71060	40
270	14622	43	56967	78	54787	19	15702180		68543	30
280	18767	44	48985	77	43860	18	05125		66026	20
290	22910	43	41005	76	32935	17	08070	46	63509	10
300	27054	44	33016	75	22010	16	11016		60992	043
310	31197		25048	74	11086	15	13961		58474	50
320	35340		17071	73	00163	14	16908	47	55956	40
330	39483		09094	72	49789239	13	19855		53438	30
340	43626		01118	71	78316	12	22802		50910	20
350	47769		65493142	70	67393	11	25749	48	48402	10
360	51912		85167	69	56470	10	28697		45883	042

Grad. 58.

[5.41.]

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Grad. 31.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	51951911		55485167		49756470		15728597		85445883	60
10	56054	43	77193	74	45548	22	31645	48	43364	50
20	60196	42	69221	79	34627	21	34594	49	40845	40
30	64338	41	61249	72	23707	20	37542	48	38326	30
40	68480		53278	71	12787	19	40491	47	35807	20
50	72622		45308	70	01868	18	43440	46	33287	10
19 0	76764		37339	69	49690950	17	46389	50	30767	0
10	80906		29371	68	80032	16	49339	50	28247	50
20	85048		21404	67	69115	15	52289	51	25727	40
30	89189	41	13438	66	58198	14	55240	51	23207	30
40	93330	42	05472	65	47282	13	58190	50	20687	20
50	97472	41	65397507	64	36366	12	61141	51	18167	10
20 0	52001613		89543	63	25451	11	64092	51	15647	0
10	05754		81580	62	14536	10	67044	52	13127	50
20	09895		73618	61	03622	9	69996	53	10607	40
30	14035	40	65657	60	49592708	8	72949	53	08087	30
40	18176	41	57697	59	81796	7	75901	53	05557	20
50	22317	40	49737	58	70883	6	78854	53	03037	10
21 0	26457		41779	57	59972	5	81807	54	00517	0
10	30597		33822	56	49061	4	84761	55	55397991	50
20	34737		25866	55	38151	3	87715	55	95467	40
30	38877		17910	54	27240	2	90670	54	92947	30
40	43017		09955	53	16331	1	93624	55	90427	20
50	47157		02001	52	05422	0	96575	55	87900	10
22 0	51297	39	65294047	51	49494513	0	99534	56	85370	0
10	55436	40	86094	50	83604	0	15802490	56	82853	50
20	59576	39	78143	49	72697	0	05446	57	80320	40
30	63715		70193	48	61791	0	08402	57	77805	30
40	67854		61243	47	50884	0	11359	58	75281	20
50	71993		52194	46	39979	0	14315	57	72756	10
23 0	76132		46346	45	29074	0	17272	57	70232	0
10	80271		38399	44	18170	0	20229	58	67707	50
20	84410	38	30453	43	07266	0	23187	58	65182	40
30	88548	39	22508	42	49396363	0	26145	59	62657	30
40	92687	38	14563	41	85459	0	29104	59	60131	20
50	96825		06619	40	74556	0	32063	59	57606	10
60	52100963		65198676	39	63654	0	35022	59	55080	0

Grad. 38.

S.M.

Grad. 11.

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Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
100000	4	5198676	42	49163654	1000	15835022	0962	85355080	16
099901	41	90734	41	52752	1000	31982	0962	52554	27
099802	40	82793	39	41851	1000	40942	0962	50027	26
099703	38	74853	38	30951	1000	43902	61	47501	17
099604	37	66913	37	20050	1000	46863	60	44974	16
099505	36	58974	36	09151	1000	49823	61	42448	10
099406	35	51035	35	49168253	1000	52784	61	39921	27
099307	34	43101	34	87358	1000	55745	62	37393	26
099208	33	35166	33	76455	1000	58707	63	34866	27
099109	32	27231	32	65562	1000	61669	63	32338	30
099010	31	19297	31	54666	1000	64631	64	29810	20
098911	30	11363	30	43769	1000	67594	64	27282	10
098812	29	03420	29	32873	1000	70557	65	24754	034
098713	28	65095448	28	21977	1000	73521	65	22226	29
098614	27	57157	27	11083	1000	76484	66	19697	40
098515	26	49219	26	00189	1000	79448	66	17168	30
098416	25	41281	25	49080184	1000	82412	67	14639	10
098317	24	33343	24	38185	1000	85377	67	12110	10
098218	23	25405	23	27290	1000	88342	68	09581	30
098119	22	17467	22	16395	1000	91308	68	07051	50
098020	21	09529	21	05500	1000	94273	69	04522	40
097921	20	01591	20	94605	1000	97239	69	01991	10
097822	19	93653	19	83710	1000	100205	70	25109461	20
097723	18	85715	18	72815	1000	03172	70	96930	31
097624	17	77777	17	61920	1000	06139	71	94400	30
097525	16	69839	16	51025	1000	09107	71	91869	31
097426	15	61901	15	40130	1000	12074	72	89338	40
097327	14	53963	14	29235	1000	15041	72	86807	30
097228	13	46025	13	18340	1000	18008	73	84275	20
097129	12	38087	12	07445	1000	20975	73	81744	10
097030	11	30149	11	96550	1000	23942	74	79212	32
096931	10	22211	10	85655	1000	26909	74	76680	50
096832	9	14273	9	74760	1000	29876	75	74147	33
096733	8	06335	8	63865	1000	32843	75	71615	32
096634	7	98397	7	52970	1000	35810	76	69082	43
096535	6	90459	6	42075	1000	38777	76	66549	10
096436	5	82521	5	31180	1000	41744	77	64016	030

Grad. 12.

S.M.

Grad. 31.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D. Logarith.	D.	Sinus.	D.
30 0	5244856		64913303	12	48871536	83	15941767	71	85264016
10	53990	34	05391	10	60653	31	44738	71	61483
20	58124	33	64897481	10	49772	82	47709	71	58950
30	62257		89571	09	38890	81	50681	71	56416
40	66390	34	81662	08	28002	80	53653	71	53881
50	70524	33	73754	07	17129		56625	73	51348
31 0	74657		65847	06	06245		59598	73	48814
10	78789	32	57941	05	48795370	10879	61371	74	46280
20	82922	33	50036	04	84491		65545	73	43745
30	87055	32	42132	03	73614	78	68513	74	41210
40	91187	33	34218	02	62736	77	71493	74	38655
50	95320	4132	26315	01	51852		74466	75	36140
32 0	99452		18413	00	40982	76	77441	75	33604
10	52303584		10522	00	30106		80416	76	31060
20	07716		02622	00	19230		83392	75	28533
30	11848		64794723	00	08356	74	86367	75	25997
40	15980		86824	99	48697481	75	89343	76	23460
50	20112	31	78927	98	86608	73	92319	77	20924
33 0	24143		71031	95	75735		95296	77	18387
10	28375	32	63136	94	64863	72	98293	78	15850
20	32506	31	55242	94	53991	71	16001251	77	13313
30	36637		47348	93	43120		04218	78	10776
40	40768		39455	92	32248	70	07206	78	08239
50	44899		31563	91	21379	71	10184	79	05701
34 0	49030		23671	90	10508		13163	79	03163
10	53161	30	15787	89	48599639	69	16142	80	00625
20	57291	31	07892	88	88770	67	19122	79	65198087
30	61422	30	00004		77903	68	22101	80	95549
40	65552	31	64692116	87	67935	67	25081	80	93010
50	69683	30	84129	86	56168	66	28061	80	90471
35 0	73813		76343	85	45302		31041	81	87932
10	77943	29	68458	84	34436	65	34012	81	85193
20	82072	30	60574	83	23571	64	37003	81	82853
30	86201		52691	82	12707		39984	82	80314
40	90332	29	44809		01843		42566	82	77774
50	94461	30	37927	80	48490979	63	45948	83	75234
60	98591		29047		80116		48931		72693

Grad. 58.

S.M.

	Sine.	D.	Logarith.	D.	Difference.	D.	Logarith.	D.	Sine.	D.
6	1000000		64624047		48482110		16003931		55172695	60
7	9999999	+	21168		89254		51954	83	70153	40
8	9999998	0	13289		58392		54897	84	67612	40
9	9999997	0	05411		47530		57881	83	65071	30
10	9999996	0	15107		36670		60864	84	62530	20
11	9999995	0	10216		25809		63848	84	59989	10
12	9999994	18	81781		14949		66852	85	57448	023
13	9999993	18	73906		04039		69817	85	54806	50
14	9999992	18	66032		48393730		72802	86	52264	40
15	9999991	18	58159		84371		75788	85	49722	30
16	9999990	18	50287		71514		78773	86	47180	20
17	9999989	18	42415		60656		81759	87	44737	10
18	9999988	17	34545		49800		84745	87	42195	022
19	9999987	17	26676		38944		87731	88	39652	50
20	9999986	17	18807		28088		90716	88	37109	40
21	9999985	18	10934		17232		93707	89	34566	30
22	9999984	18	03071		06375		96694	89	32023	20
23	9999983	17	64495205		49215547		99682	90	29478	10
24	9999982	17	57333		38360		16102700	90	26935	021
25	9999981	17	79474		27504		05650	91	24391	50
26	9999980	17	71615		16648		08648	91	21846	40
27	9999979	16	63747		52110		11635	92	19302	30
28	9999978	16	55888		41253		14622	93	16757	20
29	9999977	16	48024		30408		17610	94	14212	10
30	9999976	16	40164		19557		20598	95	11667	020
31	9999975	16	32305		08700		23587	96	09122	50
32	9999974	15	24447		48197880		26577	97	06577	40
33	9999973	15	16588		87061		29568	98	04033	30
34	9999972	15	08729		76202		32559	99	01489	20
35	9999971	15	00871		65343		35550	100	00045	10
36	9999970	15	64393011		54485		38544	101	97494	019
37	9999969	15	56534		43627		41540	102	94949	50
38	9999968	15	77310		32770		44540	103	92405	40
39	9999967	15	68458		21925		47541	104	89861	30
40	9999966	15	61606		11070		50543	105	87317	20
41	9999965	15	53755		00215		53546	106	84773	10
42	9999964	15	45904		48089301		56551	107	82229	018

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 0	52547165		64343905		48089391		16156514		85081111	00
10	51290	25	38056	49	78548	10843	59508	94	78563	50
20	55415	14	30208	40	67705		62503	2905	76015	40
30	59539	25	22360	40	56862	42	65498		73467	30
40	63664	14	14513	47	46020		68493		70919	20
50	67788	12	06667	46	35178		71489	96	68371	10
43 0	71912		64298821		24336		74485		65822	017
10	76036		90976	45	13494		77482	97	63273	50
20	80160		83132	44	02654	40	80478	96	60714	40
30	84284	23	75290	41	47991815	39	83475	97	58175	30
40	88407	24	67449	41	80977	38	86472		55625	50
50	92531	23	59608	40	70138	38	89470	98	53076	40
44 0	96654	14	51768	39	59300	37	92468		50520	010
10	51600778	13	43939	38	48463		95466		47970	50
20	04901		36091	37	37616	36	98465	99	45426	40
30	09024		28254		26790	37	16201464		42875	50
40	13147		20417	36	15953	36	04464	00	40314	20
50	17270	22	12581	35	05117	35	07464	0	37774	10
45 0	21392		04746	34	47894282		10464		35223	015
10	25515	22	64196912	33	83447	33	13465	01	31671	50
20	29637	23	89079	32	71614		16465	00	30120	40
30	33760	21	81247		61781		19466	01	27578	30
40	37882		73415	31	50948	32	22467		25018	20
50	42004		65584	30	40116		25468	02	22454	10
46 0	46126		57754	29	29284	31	28470		19912	014
10	50348	21	49925	28	18453		31472	03	17360	50
20	54369	22	42097	27	07622	30	34475		14807	40
30	58491	21	34370		47796792		37478		12254	30
40	62612	22	26443	26	85962		40481	04	09701	20
50	66734	21	18617	24	75132	27	43485		07148	10
47 0	70855		10793	23	64305		46488	03	04554	013
10	74976		02970		53478		49492	04	01041	50
20	79097		64095147	22	42651		52496		8499417	40
30	83218		87325		31824		55501	05	96933	30
40	87339		79503	21	20997		58506		94378	20
50	91459	21	71682	20	10170		61512	06	91814	10
60	95580	20	63862		47699344	26	64518		89266	012

Grad. 58.

[S.M.]

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S. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18	12035530	4 10	64063862	19	47799344	25	16264518	06	84989269	10
19	99700		50041	18	88519	25	67524	06	86714	50
20	12701820		49225	17	37694	24	70531	07	84159	40
21	07940		40408	16	66370	23	73538	08	81604	30
22	11060		32592	15	5644	22	76545	08	79049	20
23	16180		24776	14	45123	22	79553	07	76493	10
24	20300	19	16961	14	34401		82560	07	7393	0 11
25	24419	20	09147	13	23579		85568	08	71381	50
26	28539	19	01334	12	12758		88576	09	68825	40
27	32658		63993522		01937		91585		66262	56 30
28	36777		85710	10	47691116		94594	10	63712	57 20
29	40890		77900	09	80295		97604		61155	10
30	45015		72091	08	69477		100614		58598	0 10
31	49137		62183	07	58659		03624		56041	58 50
32	53255		54175	06	47840		06631	11	53481	17 40
33	57372	18	46663	05	37021		09641	10	50926	58 30
34	61490		38862		26204		12651	11	48368	20
35	65607	19	31051	04	15385		35667	12	45817	50 10
36	69727	18	23251	03	0452		18677		43251	58 0 9
37	73845		15447	02	67373736		21691	13	40693	59 50
38	77962		07044	01	82040		24704	12	38134	40
39	82081	17	63299840	00	71126		27716	13	35575	30
40	86198	18	92041	00	61312		30725		33017	20
41	90316	17	84241	00	50409		33742	13	30457	10
42	94433	18	76442	00	39667		36755		27898	60 0 8
43	98551	19	68644	00	28875		39760	14	25338	50
44	102668	18	60847	00	18064		42783		22778	40
45	00787		53050	99	07553		45797	15	20218	30
46	00902		45254	98	47496442		48812		17658	61 10
47	01019		37455	97	85632		51827	16	15097	60 10
48	01136	16	29664	94	74821		54843		12537	61 0 7
49	01252	17	21870	93	64011		57859	17	09976	50
50	01369	16	14077	91	53201		60876	16	07415	40
51	01485		06286		42394		63892	17	04854	62 30
52	01601		63798490	90	31586		66909		02192	61 20
53	01717		90703	89	20779		69926		99731	62 10
54	01833		82916		09973		72943		97169	62 0 6

Grad. 58.

S. M.

Ss

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
4 0	52843833		63782916		47409973	06	16372943		84897169	80
10	47949	4116	63775128	788	47399167	10805	78961	19	74607	78
20	52065		67341	85	88362	04	78979	20	91044	63
30	56181	15	59554	86	77557	05	81997	19	89482	61
40	60296	16	51768	85	66752	04	85016	20	86119	61
50	64412	15	43983	84	55948	05	88035	21	84317	61
5 0	68527		36198	83	45143	04	91055	20	81794	61
10	72642		28414	81	34339	01	94075	21	79230	61
20	76757		20631	80	23535	00	97096	20	76447	61
30	80872		12850	79	12734	01	16400116	21	74103	61
40	84987	14	05069	78	01932	01	03137	22	71559	61
50	89101	15	63697289	77	47391131	00	06158	23	68975	61
6 0	93216	14	89510	76	80331	99	09179	24	66411	61
10	97330		81732	75	69531	98	11201	25	63847	61
20	52901444		73955	74	58732	97	15223	26	61282	61
30	05558		66178	73	47933	96	18245	27	58717	61
40	09672		58402	72	37134	95	21268	28	56152	61
50	13786		50627	71	26336	94	24291	29	53587	61
7 0	17900		42852	70	15537	93	27315	30	51012	61
10	22014	13	35078	69	04739	92	30339	31	48438	61
20	26127	14	27306	68	47193943	91	33363	32	45864	61
30	30241	13	19535	67	83148	90	36387	33	43290	61
40	34354		11764	66	72352	89	39412	34	40716	61
50	38467		03994	65	61557	88	42437	35	38141	61
8 0	42580		63596215	64	50762	87	45463	36	35567	61
10	46693	12	88457	63	39968	86	48489	37	33000	61
20	50805	13	80690	62	29175	85	51515	38	30431	61
30	54918		72914	61	18382	84	54542	39	27862	61
40	59031	12	65158	60	07590	83	57568	40	25293	61
50	63143		57393	59	47096798	82	10595	41	22724	61
9 0	67255	13	49628	58	86006	81	63112	42	20155	61
10	71368	12	41864	57	75214	80	66150	43	17586	61
20	75480	11	34101	56	64423	79	69188	44	15017	61
30	79592		26340	55	53633	78	72207	45	12448	61
40	83703	11	18580	54	42845	77	75235	46	10879	61
50	87815	10	10810	53	31056	76	78264	47	8320	61
60	91926	9	03061	52	21268	75	81293	48	00610	61

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M

of D.	Sinus.	D.	Logarith.	D.	Different.	D	Logarith.	D	Sinus.	D.
10	12592520	12	28501041	12	47021268	88	10411793	30	84804310	60
11	1400078	13	29471303	13	10480	89	84843	31	01240	61
12	157207140	14	307138	14	16000000	90	87853	32	84799671	62
13	174220	15	32280	15	18900	91	90884	33	97101	63
14	19371	16	70034	16	72140	92	93714	34	94532	64
15	22481	17	84170	17	63184	93	26043	35	91952	65
16	26593	18	30534	18	14248	94	59370	36	89307	66
17	30704	19	42770	19	45764	95	6503005	37	86821	67
18	34819	20	41018	20	14978	96	06042	38	84250	68
19	38928	21	33207	21	24394	97	09071	39	81872	69
20	53035	22	25516	22	13411	98	12105	40	79106	70
21	47145	23	17866	23	02621	99	15138	41	76537	71
22	41254	24	10017	24	4039841	100	18171	42	73965	72
23	45363	25	02260	25	81064	101	21205	43	71394	73
24	49475	26	67394521	26	70183	102	24215	44	68822	74
25	53584	27	8677	27	59507	103	27271	45	66250	75
26	57694	28	79030	28	48722	104	30308	46	63678	76
27	61803	29	71128	29	37941	105	33342	47	61106	77
28	65912	30	63341	30	27164	106	36377	48	58533	78
29	70021	31	55292	31	16381	107	39411	49	55910	79
30	74131	32	47055	32	05600	108	42441	50	53331	80
31	78240	33	40071	33	36794811	109	45484	51	50814	81
32	82348	34	31974	34	84074	110	48510	52	48241	82
33	86457	35	24378	35	73277	111	51537	53	45667	83
34	90565	36	17071	36	61541	112	54567	54	43093	84
35	94674	37	09331	37	51711	113	57587	55	40511	85
36	98782	38	01510	38	40951	114	60600	56	37935	86
37	102890	39	61291031	39	30177	115	63707	57	35371	87
38	106903	40	87448	40	19403	116	66741	58	32791	88
39	111008	41	72423	41	08619	117	69780	59	30211	89
40	115114	42	70670	42	46697856	118	72823	60	27646	90
41	119221	43	62858	43	87083	119	75863	61	25071	91
42	123328	44	55214	44	76312	120	78901	62	22496	92
43	127435	45	47481	45	65541	121	81941	63	19920	93
44	131542	46	39754	46	54770	122	84982	64	17344	94
45	135649	47	32022	47	43900	123	88023	65	14768	95
46	139756	48	24295	48	33129	124	91064	66	12192	96
47	143863	49	16568	49	22358	125	94105	67	9644	97
48	147970	50	9881	50	11587	126	97146	68	7096	98
49	152077	51	1000	51	380	127	100187	69	4548	99
50	156184	52	0000	52	000	128	103228	70	2000	100

Grad. 57.

S.M.

Grad. 32.

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A. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	53139858	07	63224293	28	46633219	70	16591064	42	84712192	60
10	43965		16565	27	12459		94106	41	09616	76
20	48072	06	08838	7716	11691	10768	97147	41	07039	1577
30	51178	07	01112	25	00923	67	16600189	40	04462	10
40	56285	06	63193386	24	46590155	68	03231	39	01885	20
50	60391		85661	23	79387	69	06274	43	84699308	10
60	64497	07	77937	22	68620	70	09317	44	96731	78
70	68604	06	70213	21	57852	65	12361	43	94153	10
80	72710		62491	20	47087	64	15405	44	91977	10
90	76816	05	54770	19	36322	63	18448	45	88999	20
100	80921	04	47049	18	25557	62	21492	46	84415	30
110	85027		39329	17	14792	61	24537	47	81241	40
120	89133	105	31610	16	04028	60	27582	48	78022	50
130	93238		23891	15	46593163	59	30628	49	75684	60
140	97343		16174	14	82501	58	33673	50	73525	70
150	101448		08458	13	71739	57	36719	51	70944	80
160	05553		00742	12	60977	56	39765	52	68340	90
170	09658		63092027	11	50215	55	42812	53	65787	100
180	13763	04	85313	10	39454	54	45859	54	63207	110
190	17868	03	77599	09	28692	53	48907	55	60626	120
200	21972	02	69886	08	17932	52	51954	56	58046	130
210	26077	01	62175	07	07173	51	55002	57	55406	140
220	30181		54465	06	46396415	50	58050	58	52811	150
230	34285		46755	05	85656	49	61091	59	50261	160
240	38389		39046	04	74898	48	64148	60	47727	170
250	42493		31338	03	64140	47	67196	61	45141	180
260	46597		23631	02	53384	46	70247	62	42560	190
270	50700	03	15945	01	42628	45	73297	63	39976	200
280	54804	02	08219	00	31872	44	76347	64	37386	210
290	58907	01	00514		21116	43	79398	65	34814	220
300	63011		62992809		10360	42	82449	66	32233	230
310	67114		85105		46299604	41	85501	67	29649	240
320	71217		77403		88551	40	88552	68	27060	250
330	75320	01	69701		78097	39	91604	69	24481	260
340	79422	00	62000		67344	38	94656	70	21900	270
350	83525		54300		56591	37	97709	71	19317	280
360	87628		46600		45838	36	1000761	72	16731	290

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S. 37.

N. S.	Sinus.	D. Logarith.	D. Different	D. Logarith.	D. Sinus.	D
10	94151628	62946800	46245038	16700762	84619317	80
10	94230	38903	35088	03815	16733	90
10	94312	31106	24338	01868	14149	40
10	94494	23509	15587	09922	11565	10
10	94600	15813	02837	12976	08981	20
10	94738	08118	46192017	16031	06397	10
10	11240	00422	81337	19086	03812	047
10	14152	62892724	70587	22142	01228	50
10	20441	85039	59840	35197	4598643	40
10	44145	77335	49092	58153	96057	30
10	6646	69654	38141	31104	93472	10
10	33747	61964	27559	14365	90887	10
10	15448	54275	16653	37427	88301	046
10	47949	46587	06108	40475	81725	50
10	45090	38903	56004104	43346	89229	40
10	49119	31221	84079	46594	80522	30
10	53251	23517	72875	49852	77976	20
10	57354	15812	61331	53211	73369	10
10	61452	08118	52587	56770	72782	045
10	65552	00473	41042	58830	70195	50
10	69652	4792760	30901	61889	67608	40
10	73752	85706	20160	64949	65020	30
10	77852	77425	09419	68009	62472	20
10	81952	69748	45548639	71069	59824	10
10	86052	62069	87920	74130	57250	044
10	90152	54591	70200	77191	54688	10
10	94252	47226	61462	80252	52010	40
10	98352	39027	52723	83312	49491	30
10	102452	31141	44081	86370	46900	20
10	106552	23518	35548	89429	44317	10
10	110652	15812	27510	92488	41727	043
10	114752	08118	19477	95547	39132	10
10	118852	00422	11438	98606	36542	40
10	122952	47927	34494	101665	33954	30
10	127052	40117	26526	104723	31364	20
10	131152	32514	18532	107781	28774	10
10	135252	24922	10518	110839	26184	042

M. S.	Sinus.	D.	Logarith.	D.	Differenc.	D.	Logarith.	D.	Sinus.	D.
18 0	53435235	98	62669982	69	45859098	34	16510884	65	84526183	60
10	393333		62313	68	48364		13449	66	135594	50
20	43431	97	54645	67	37630		17015	66	21002	40
30	47528	98	46978	66	26898	32	10080	65	18411	30
40	51626		39312	65	16166		23146	2066	15819	20
50	55723	4097	31647	65	05435		26212	67	13418	10
19 0	59820		23983	64	45794704	1071	29279	67	10636	0
10	63917		16319	63	83973		32346	68	08044	90
20	68014		08656	62	73242	19	35414	67	0545	80
30	72111		00994	61	62513		38481	68	02860	70
40	76208		62593333	60	51784	18	41549	68	00267	60
50	80305	96	25675	59	41056		44617	69	8449765	50
20 0	84401		78014	58	30328	27	47686	69	95081	40
10	88498	97	70356	57	19601		50755	70	92485	30
20	92594	96	62698	56	08873	28	53825	70	87805	20
30	96690		55041	55	15698147	26	56894	69	87305	10
40	53500786		47385	54	87421		59964	70	84708	0
50	04882		39725	53	76695		63034	71	82184	90
21 0	08978	95	32074	52	65969	35	66105	71	79120	80
10	13073	96	24420	51	55244		69176	72	76936	70
20	17169	95	16762	50	44519	23	72248	71	74211	60
30	21264		09115	49	33796		75319	72	71737	50
40	25359		01464	48	23073		78391	72	69142	40
50	29454		62493813	47	12350	22	81463	73	66547	30
22 0	33545		86564	46	01628	21	84536	73	63951	20
10	37644		78516	45	45590907		87609	74	61356	10
20	41739		70869	44	80180		90683	74	58760	0
30	45834	94	63221	43	69465		93756	73	56164	90
40	49928		55574	42	58744		96830	74	53568	80
50	54022	95	47928	41	48021	20	99904	75	50973	70
23 0	58115		40283	40	37304		16902979	75	48376	60
10	62211	24	32639	39	26585	19	06054	19	45779	50
20	66305		24906	38	15867	18	09129	17	43182	40
30	70395	93	17354	37	05150		12204	18	40585	30
40	74490	94	09712	36	45494432		15280	17	37985	20
50	78580		02071	35	83735		18356	16	35320	10
60	82680		62394432	34	72999		21433	77	32723	0

Sinus.	D.	Logarith.	D.	Different.	U	Logarith.	D.	Sinus.	D.
1171300	100	8234443	39	4547299	16	16921433	100	34431793	100
16773		86791	38	62283	15	24510	100	30191	100
70806		79155	37	51578	14	27587	100	27597	100
98519		71518	36	40854	13	30664	100	24339	100
89012		63881	35	30129	12	33742	100	21400	100
1380543		56246	34	19428	11	36820	100	19801	100
62216	91	48612	33	87713	10	39899	100	17202	100
88330		40779	32	45306001	9	42978	100	14603	100
11442	91	32347	31	87290	8	46057	100	11704	100
15115	92	25714	30	76572	7	49136	100	84405	100
21607		18082	29	65566	6	52216	100	60805	100
27699		10551	28	55155	5	55296	100	36403	100
37791		02821	27	44444	4	58377	100	01605	100
11883		94245182	26	33778	3	61458	100	4599005	100
35975		87104	25	23025	2	64539	100	96404	100
44067	95	75911	24	12316	1	67620	100	41804	100
48158	95	71205	23	01607	0	70701	100	91201	100
52249	92	64683	22	45200505	0	73782	100	88602	100
56341	91	57051	21	30191	0	76863	100	80001	100
60432		49451	20	15481	0	79944	100	83309	100
64523	90	41851	19	55775	0	83025	100	80708	100
68614	91	34151	18	42075	0	86107	100	78196	100
72704		26551	17	30275	0	89188	100	75594	100
76795	90	18951	16	18665	0	92269	100	72991	100
80885	91	11351	15	15552	0	95350	100	70384	100
84976	90	03702	14	05254	0	98431	100	67782	100
89066		1150000	13	45794551	0	10051339	100	65184	100
93156		88473	12	83849	0	04624	100	62581	100
97246		80875	11	73146	0	07705	100	59977	100
101336	10	73240	10	62444	0	10786	100	57374	100
105426	90	65634	9	51741	0	13867	100	54770	100
109516	85	58009	8	41030	0	16948	100	52167	100
113606	10	50375	7	30327	0	20029	100	49563	100
117696	89	42741	6	19638	0	23110	100	46958	100
121786		35172	5	8528	0	26233	100	44354	100
125876		27560	4	4508239	0	29311	100	41749	100
129966		19950	3	87141	0	32409	100	39145	100

Grad. 32.

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M. S.	Sinus.	D.	Logarith.	D.	Difference.	D.	Logarith.	D.	Sinus.	I.
30	53719961	89	61119950	04	49087541	98	17031409	84	84134141	10
10	34090	88	11341	04	76843	98	35478	84	30140	10
10	3813	89	04733	07	66146	98	35127	84	11974	10
30	42227	88	62097126	04	55440	98	41677	84	11140	10
40	46311	89	89518	07	44752	98	44766	84	21751	10
50	50404	88	81911	07	34055	98	47375	84	26112	10
31	54472	88	74305	04	2335	96	50446	84	27112	10
30	58520	88	66700	05	12663	95	54037	84	28701	10
20	62668	87	59096	04	01968	95	57123	84	28701	10
30	66756	87	51493	03	44991273	93	60210	84	11251	10
40	70843	88	43891	01	80580	94	63311	84	14020	10
50	74931	87	36289	00	69886	92	66403	84	20475	10
32	79018	88	28689	00	59194	92	69495	84	07871	10
10	83106	87	21090	7590	48502	95	72588	84	09508	10
20	87193	87	13491	7590	37810	94	75681	84	02017	10
30	91280	86	05893	7590	27118	91	78775	84	00049	10
40	95367	86	61998295	97	16427	90	81868	84	84297041	10
50	99453	87	06698	96	05736	90	84962	84	96833	10
33	53803540	86	83103	95	41895046	89	88056	84	90018	10
10	07617	86	75507	94	84355	89	91151	84	84611	10
20	11713	86	67913	93	73667	88	94246	84	80000	10
30	15795	85	60210	88	61979	85	97342	84	80181	10
40	19885	85	51712	81	51299	84	17102437	84	80181	10
50	23971	85	45133	81	45802	87	03533	84	79107	10
34	28057	85	37544	80	30913	84	06619	84	70179	10
10	32141	85	29954	79	10118	84	09716	84	71740	10
20	36229	85	22365	78	09142	84	12801	84	71550	10
30	40314	86	14777	87	44798856	87	15911	84	03710	10
40	44400	85	07186	87	88173	87	19018	84	03100	10
50	48485	86	61899601	86	77486	84	22117	84	03100	10
35	52570	85	92016	85	66802	84	25214	84	50001	10
10	56655	85	84431	84	56118	83	28311	84	13001	10
20	60740	85	76847	83	45435	82	31417	84	11410	10
30	64825	84	69264	83	34753	82	34514	84	11410	10
40	68910	84	61683	82	24070	83	37611	84	10410	10
50	72994	84	54094	82	13388	82	40717	84	07110	10
36	77079	83	46517	81	02706	82	43814	84	03110	10

Grad. 32.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
36 0	53877079		61846517		44701706	81	17143811		34245240	60
10	81163	+	38936	81	44692024	82	46912	01	42628	12
20	85247	+	31356	80	81343	81	50013	01	40015	13
30	89331		23778	79	70663	80	53115	02	37403	13
40	93415		16200	79	59984	79	56216	01	34790	30
50	97499	83	08623	77	49305	78	59318	01	32177	20
37 0	53901582	84	01047	76	38627	79	62420	02	29504	10
10	05666	83	61793471	75	27948	78	65523	03	26951	023
20	09749		85896	74	17270	78	68626	04	24337	50
30	13832		78322	73	06592	77	71730	04	21723	40
40	17915		70745	72	44595916	76	74833	03	19109	30
50	21998		63177	71	85240	75	77937	02	16495	20
38 0	26081		55606		74565	74	81041	05	13881	10
10	30164		48035	70	63889	73	84146	05	11267	022
20	34247	82	40465	69	53214	72	87251	06	08652	50
30	38329		32896		42535	71	90357	06	06037	40
40	42411	83	25327	68	31865	70	93462	05	03422	30
50	46494	82	17755	66	21191	69	96568	06	00807	20
39 0	50576		10193		10515	68	99674	07	84198191	10
10	54658		02627	65	44499846	67	17202781	07	95575	021
20	58740	81	61695062	64	89174	66	05888	08	92959	50
30	62821	82	87498	63	78502	65	08996	08	90343	40
40	66903	81	79934	62	67831	64	12103	07	87727	30
50	70984	82	72371	61	57160	63	15211	08	85111	20
40 0	75066	81	64809	60	46490	62	18319	09	82494	10
10	79147		57248	59	35820	61	21428	09	79877	020
20	83228		49688	60	25151	60	24537	10	77260	50
30	87309		42129	59	14482	59	27647	10	74643	40
40	91390		34570	58	03814	68	30756	09	72025	30
50	95471	80	27012	58	44393146	67	33866	10	69407	20
41 0	99551	81	19455	57	82479	66	36976	11	66790	10
10	54003632	80	11898	56	71811	65	40087	11	64172	019
20	07712		04343	55	61145	64	43198	12	61553	50
30	11792		61596789	54	50479	63	46310	12	58935	40
40	15872		89235	53	39814	62	49421	11	56316	30
50	19952		81682	52	29149	61	52533	12	53697	20
60	24032		74130	52	18485	60	55645		51078	10

Grad. 57.

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Grad. 32.

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L. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
2 0	54024032	80	61574130	52	44518485	65	17255645	13	84151078	60
10	281123	79	66578	51	07820	65	58758	13	48459	19 50
20	32191	79	59027	51	44297156	64	61871	14	45839	20 40
30	36271	80	51478	50	86493	63	64985	14	43220	19 30
40	40350	+079	41929	49	75831	62	68098	13	40600	20 20
50	44429	79	36381	48	65169	61	71212	14	37980	0 10
3 0	48508		28834	47	54508	62	74326	15	35360	0 17
10	52587		21287	46	43816	61	77441	15	32739	21 50
20	56666		13741	45	33185	60	80556	16	30119	20 40
30	60745	78	06196	44	22524	59	83672	16	27498	21 30
40	64823	79	61498652	43	11865	58	86787	15	24877	22 20
50	68902	78	91109	42	01206	57	89903	16	22255	22 10
4 0	72980		83567	41	44190548	58	93019	3 117	19634	21 016
10	77058		76025	40	79889	59	96136	21	17012	22 50
20	81136		68484	39	69231	58	99253	22	14391	22 40
30	85214		60944	38	58574	57	17302370	18	11765	23 30
40	89292		53405	37	47917	56	05488	17	09146	22 20
50	93370	77	45866	36	37261	55	08605	18	06524	23 10
5 0	97447	78	38329	35	26606	56	11723	19	03905	0 15
10	54101525	77	30792	34	15950	55	14841	19	01278	30
20	05602		23256	33	05295	54	17961	34098655	34098655	40
30	09679		15721	32	44094641	53	21080		96032	30
40	13756		08180	31	83987	52	24199		93409	20
50	17833		00652	30	73333	51	27319	20	90785	10
6 0	21910	76	1393120	29	62680	50	30440	21	88161	0 14
10	25986	77	85588	28	51028	49	33560	20	85537	50
20	30063	76	78057	27	41376	48	36681	21	82913	40
30	34135	77	70527	26	30725	47	39801	22	80289	30
40	38216	76	62997	25	20073	46	42924	23	77664	20
50	42292		55468	24	09422	45	46046	24	75039	10
7 0	46368		47939	23	43998770	44	49169	25	71414	0 13
10	50444	75	40411	22	88119	43	52292	26	69785	50
20	54519	76	32884	21	77469	42	55413	27	67164	40
30	58595	75	25359	20	66820	41	58539	28	64538	30
40	62670	76	17834	19	56172	40	61662	29	61913	20
50	66746	75	10310	18	45524	39	64786	30	59287	10
60	70821		02787	17	34877	38	67910	31	56660	0 12

Grad. 57.

S. M.

Grad. 32.

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D. Sinus.	D.
48 0	54170821	61302787	43934877	17367910	84056660	60
10	74896	61295264	24219	71035	54034	50
20	78971	87742	13582	74160	51407	40
30	83046	80221	02936	77285	48781	30
40	87121	72701	43892290	80411	46154	20
50	91195	65182	81646	83536	43527	10
49 0	95270	57664	71002	86662	40899	0 11
10	99344	50146	60358	89788	38272	50
20	54203418	42629	59714	92915	35644	40
30	07492	35113	39071	96042	33016	30
40	11566	27598	28428	99170	30388	20
50	15640	20084	17786	7402298	27559	10
50 0	19714	12571	07145	05426	25131	0 10
10	23788	05058	43796504	08554	22502	50
20	27861	6419754	85865	11683	19873	40
30	31934	90035	75223	14812	17244	30
40	36008	82525	64583	17942	14615	20
50	40082	75015	43943	21072	11985	10
51 0	44154	67507	43305	24202	09355	0 9
10	48226	59995	32667	27332	06725	50
20	52299	52492	22029	30463	04095	40
30	56372	44986	11392	33594	01465	30
40	60444	37480	00754	36726	83998834	20
50	64517	29975	43690117	39858	96204	10
52 0	68589	22471	79481	42990	93573	0 8
10	72661	14967	68844	46123	90942	50
20	76733	07464	58208	49256	88310	40
30	80805	61099963	47574	52389	85679	30
40	84876	92462	36939	55523	83047	20
50	88948	84962	26305	58657	80415	10
53 0	93019	77463	15672	61791	77783	0 7
10	97090	69964	05038	64926	75151	50
20	54301162	62466	43594405	68062	72518	40
30	05233	54969	83773	71196	69886	30
40	09304	47473	73141	74332	67253	20
50	13374	39977	62509	77468	64620	10
60	17445	32483	51879	80604	61986	0 6

Grad. 57.

S.M.

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Grad. 32.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54 °	54317445	71	61032483	94	43551879	31	17480604	3137	83961986	60
10	21516		24989	93	41248	30	83741		59353	33
20	25586		17496	92	30618	29	86878		56719	40
30	29656		10004		19989		90015	38	54085	30
40	33726		02512		09359	30	93153	37	51451	20
50	37796		60995021	91	43498731	10628	96290	38	48817	10
55 °	41866		87531	90	88103		99428		46183	35
10	45936		80041	89	77475		17502566	39	43548	50
20	50006		72552	87	66847	26	05705		40913	40
30	54075		65065	86	56221		08844	40	38278	30
40	58445		57579		45595		11984		35643	20
50	62214		50093	85	34969	25	15124		33007	10
56 °	66283		42608	84	24344	26	18264	41	30372	35
10	70352		35123		13718	25	21405		27736	30
20	74421		27639	83	03093	24	24546		25100	40
30	78490		20156	82	43392469		27687	42	22463	37
40	82558		12674	81	81845	22	30829	41	19827	36
50	86627		05193	80	71223		33970	41	17190	20
57 °	90695		60897713		60601	23	37112	42	14554	37
10	94763		90233	7478	49978	21	40255	43	11917	38
20	98831		82755		39357		43398		09279	40
30	54402899		75277	75	28736		46543	44	06642	37
40	06967		67795	77	18114	22	49685	44	04004	38
50	11035		60322	75	07494	20	52828	43	01366	10
58 °	15102		52847	73	43296875	19	55972	44	83898728	0 12
10	19170		45372	74	86256		59116	45	96090	50
20	23237		37898	73	75637	18	62261		93452	40
30	27304		30425		65019	19	65406	46	90813	35
40	31371		22952	72	54400	18	68552		88174	20
50	35438		15480	70	43782	17	71698	47	85535	10
59 °	39505		08010		33165		74845		81896	0 1
10	43572		00540	68	23548	15	77992		80257	50
20	47639		60793072	67	11933		81139	48	77617	40
30	51705		85605	67	01118		84287	47	74977	30
40	55771		78137	68	43190703		87434	48	72337	20
50	59837		70670	67	80088		90582		69697	10
60	63903		63202	68	69472	16	93730		67057	0

Grad. 57.

S. M.

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M. S.	Sin.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sin.	D.
0	54463903	60	60763101	66	43169472	15	17593730	3149	83867057	60
10	67969	65	55736	64	58857	15	96879	3149	64416	50
20	72035	65	48272	64	48144	13	17600028	3149	61775	40
30	76101	65	40809	61	37632	12	03177	50	59134	30
40	80166	65	33346	62	27019	13	06327	49	56493	20
50	84232	65	25884	61	16408	10611	09476	50	53852	10
1	88297	65	18423	60	05797	10611	12626	51	51810	41
10	92362	65	10962	60	43095186	10611	15776	51	48569	42
20	96427	65	03501	58	84575	09	18927	51	45927	43
30	54500492	64	60696044	57	73966	10	22078	52	43284	42
40	04557	64	88586	56	63356	09	25230	53	40642	30
50	08622	64	81129	55	52747	08	28382	53	38000	20
2	12686	64	73673	54	42138	08	31535	54	35357	10
10	16751	64	66217	53	31529	06	34688	54	32714	058
20	20815	64	58762	52	20921	06	37841	54	30071	50
30	24879	63	51308	51	10313	05	40995	55	27427	40
40	28943	63	43855	50	42999707	05	44148	55	24784	30
50	33007	63	36403	49	89101	05	47302	55	22140	20
3	37071	63	28952	48	78496	04	50456	56	19496	10
10	41134	63	21501	47	67890	04	53611	56	16852	057
20	45198	63	14051	46	57285	03	56766	56	14208	50
30	49261	62	06602	45	46681	03	59921	57	11563	45
40	53324	62	60599153	44	36076	02	63077	57	08918	30
50	57387	62	91705	43	25473	02	66232	57	06273	20
4	61450	62	84255	42	14871	01	69388	58	03628	10
10	65513	62	76813	41	04269	01	72544	58	00983	056
20	69576	62	69368	40	42893667	00	75701	59	83798338	50
30	73639	62	61924	39	83066	00	78858	60	95692	40
40	77701	62	54480	38	72464	00	82016	60	93046	30
50	81763	62	47037	37	61863	00	85174	60	90400	20
5	85826	62	39594	36	51261	00	88333	60	87754	10
10	89888	62	32152	35	40660	00	91492	60	85107	055
20	93950	62	24711	34	30060	00	94651	60	82460	50
30	98011	62	17271	33	19460	00	97811	60	79813	40
40	54602073	62	09832	32	08862	00	17700970	60	77166	30
50	06135	62	02394	31	42798264	00	04130	60	74519	20
60	10196	62	60494957	30	87667	00	07290	60	71872	10

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S.M.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinu.	D.
6 0	54610196	61	50494957	37	42787667	97	17707190	40	83771872	60
10	14257	61	87520	36	77070	97	10450	61	69224	50
20	18319	61	80084	35	66473	96	13611	61	66576	40
30	22380	60	71649	34	55877	97	16772	61	63928	30
40	26441	60	65214	33	45280	95	19934	61	61280	20
50	30501	61	57781	32	34685	94	23096	61	58632	10
7 0	34562	60	50349	31	24091	95	26258	63	55983	49
10	38623	60	42917	30	13496	94	29421	63	53334	48
20	42685	60	35486	29	02902	94	32584	63	50688	47
30	46743	60	28056	28	42692308	93	35748	64	48035	46
40	50803	60	20626	27	81715	93	38911	64	45386	45
50	54863	60	13197	26	71122	91	42075	64	42736	44
8 0	58923	59	05770	25	60531	91	45239	65	40087	43
10	62983	59	60398343	24	49939	91	48404	65	37437	42
20	67043	59	90917	23	39348	91	51569	66	34784	41
30	71102	59	83492	22	28757	90	54735	66	32136	40
40	75162	59	76067	21	18167	90	57900	66	29485	39
50	79221	59	68643	20	07577	90	61066	66	26834	38
9 0	83280	58	61219	19	43596987	89	64232	67	24183	37
10	87339	58	53796	18	86397	89	67399	67	21532	36
20	81398	58	46374	17	75808	87	70566	68	18881	35
30	95457	58	38953	16	65212	87	73734	68	16229	34
40	99515	58	31533	15	54632	86	76901	67	13577	33
50	14703574	58	24114	14	44045	86	80069	68	10925	32
10 0	07632	57	16696	13	33459	85	83237	69	08271	31
10	11690	57	09279	12	22873	85	86406	69	05621	30
20	15748	57	01862	11	12287	84	89575	70	02968	29
30	19806	57	60294446	10	01701	84	92745	70	00315	28
40	23864	56	87030	9	42491116	83	95914	71	83697662	27
50	27922	56	79615	8	80531	83	99084	71	95009	26
11 0	31980	57	72201	7	69947	82	17802254	72	92356	25
10	36037	57	64788	6	59363	82	05425	72	89702	24
20	40094	57	57376	5	48780	82	08596	72	87048	23
30	44152	57	49965	4	38198	82	11767	72	84394	22
40	48209	56	42554	3	27615	82	14939	73	81740	21
50	52266	56	35144	2	17033	82	18111	73	79086	20
60	56322	56	27734	1	06450	83	21284	73	76431	19

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S. M.

M. S.	Sinus.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus.	D.
12 0	54756323		60227734		42406435	82	17821284		83676431	60
10	60379	57	20325	09	12395868	73	24457	73	73777	54
20	64438		12917	08	85281	74	27631	74	71122	55
30	68491		05510	07	74701	80		73	68466	56
40	72548		60998104	06	64126		30804	3172	65811	55
50	76604		90699	05	53547	79	37152	74	63156	10
13 0	80660		83295	04	42960	1078	40326	75	60500	2616
10	84716		75891	03	32391	1078	43501	75	57844	47
20	88772		68429	02	21813		46676	76	55188	50
30	92828	55	61087	01	11235	76	49852	75	52531	57
40	96883	56	53686		60659	77	53027	75	49875	56
50	100939	55	46285	00	42190082	76	56203	76	47218	57
14 0	04994		38885	99	79506		59379	77	44561	046
10	09049		31486	98	68930	75	62556	77	41904	50
20	13104		24088	97	58335	75	65733	78	39247	40
30	17159		16691	96	47780	74	68911	78	36589	58
40	21214	54	09294	95	37206	74	72088	77	33932	57
50	25268	55	01898	94	26632	73	75266	78	31274	58
15 0	29323	54	0094503	93	16055		78444	79	28616	045
10	33377	55	87109	93	05486	72	81623	79	25957	59
20	37432	54	79716	92	42194914	72	84802	80	23299	58
30	41486		72324	91	84342	71	87982	80	20640	59
40	45540	53	64934	91	73771		91161	79	17981	20
50	49593	54	57547	90	63200		94341	80	15322	10
16 0	53647		50150	90	52629		97521	81	12663	044
10	57701	53	42760	89	42058	70	17900702	81	10003	60
20	61754	54	35371	88	31488		03883	82	07344	59
30	65808		27583	87	20918	68	07065	82	04684	60
40	69861	53	20596	86	10350		10246	81	02024	20
50	73914		13210	85	41099782	67	13428	82	83599363	10
17 0	77967		05825	84	89215		16610	83	96703	60
10	82020	52	59998441	83	78648		19793	83	94042	61
20	86072	53	91057	83	68081		22976	84	91381	40
30	90125	52	83674		57514		26160		88720	30
40	94177	53	76291	82	46947	66	29344		86059	20
50	98230	52	68909	81	36381	65	32528		83398	10
18 0	102282		61528		25816		35712		80736	042

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	54902282	4152	59961528	80	41025816	55	17935712	86	83580736	60
10	06334		54148	78	15251	55	38897	86	78074	50
20	10386		46769	77	04682	10564	42082	86	75412	40
30	14438	51	39390	78	41994123	53	45267	87	72750	30
40	18489	52	32012	77	83555	53	48453	87	70088	20
50	22541	51	24635	76	72996	54	51639	87	67425	10
19 0	26592		17258	76	62432	63	54826	88	64762	041
10	30643	52	09882	75	51865	63	58013	88	62099	50
20	34695	51	02507	74	41306	61	61201	87	59436	40
30	38746	50	59895133	73	30745	59	64388	88	56773	30
40	42796	51	87760	71	20184	59	67576	88	54109	20
50	46847		80387	70	09623	58	70764	89	51445	10
20 0	50898	50	73016	69	41899064	58	73952	90	48781	040
10	54948	51	65646	68	88505	58	77141	90	46117	50
20	58999	50	58276	67	77946	56	80330	91	43453	40
30	63049		50907	66	67388	55	83519	91	40788	30
40	67099		43538	65	56825	56	86709	92	38123	20
50	71149		36170	64	46271	55	89899	92	35458	10
21 0	75199		28803	63	35713	55	93090	93	32793	039
10	79249	49	21437	62	25156	56	96181	93	30128	50
20	83298	50	14072	61	14600	55	99472	94	27462	40
30	87348	49	06708	60	04045	55	18001663	94	24796	30
40	91397		59799344	59	41793489	56	05855	95	22130	20
50	95446		91981	58	82934	56	09047	95	19464	10
22 0	99495		84618	57	72378	53	12240	96	16798	038
10	55003544		77256	56	61823	55	15433	96	14131	50
20	07593		69895	55	51268	53	18627	97	11465	40
30	11642	48	62535	54	40715	53	21820	97	08798	30
40	15690	49	55176	53	30162	53	25014	98	06130	20
50	19735	48	47818	52	19610	51	28208	98	03463	10
23 0	23787		40461	51	09058	51	31403	99	00796	037
10	29835		33105	50	41698507	52	34598	99	83498128	50
20	31883		25745	49	87955	50	37794	99	95460	40
30	35931		18394	48	77405	51	40989	99	92792	30
40	39979	47	11039	47	66854	50	44185	99	90124	20
50	44026	48	03685	46	56304	51	47381	99	87455	10
60	48074		59696331		45753		50578		84786	036

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
24 0	55048074		59696331		41645753	50	18050578		83484786	60
10	551211	47	88978	53	35203	50	53775	97	82117	50
20	56169	48	81626	52	24653	18	56973	98	79448	40
30	60216	4047	74275	51	14105	18	60170	97	76779	30
40	64263	4047	66925	50	03557	10546	63368	3198	74110	20
50	68310	46	59577	48	41593011	10546	66566	3198	71440	10
25 0	72356	47	52229	47	82465	45	69764	99	68770	035
10	76403		44882	7346	71919	45	72963	99	66100	50
20	80450	46	37536	45	61374	45	76162	01	63430	40
30	84496		30190	44	50825	46	79361	01	60759	30
40	88542		22844	45	40283	45	82561	00	58088	20
50	92588		15499	44	29738	45	85761	01	55418	10
26 0	96634		08155	43	19193	44	88962	01	52747	034
10	55100680		00812	42	08645	44	92163	01	50075	50
20	04726	45	59593470	41	41498105	42	95365	01	47404	40
30	08771	46	86120	41	87563	43	98566	01	44732	30
40	12817	45	78788	40	77020	42	18101768	02	42060	20
50	16862		71448	39	66478	42	04970	03	39388	10
27 0	20907		64109	38	55936	41	08173	03	36716	033
10	24952		56771	37	45395	39	11376	04	34044	50
20	28997		49434	36	34854	39	14580	03	31371	40
30	33042		42098	35	24315	40	17783	04	28698	30
40	37087	44	34762	35	13775	39	20987	04	26025	20
50	41131	45	27427	34	03236	40	24191	05	23352	10
28 0	45176	44	20092	34	11392696	39	27396	05	20678	032
10	49210		12758	33	82157	39	30601	06	18005	50
20	53264		05425	32	71618	37	33807	05	15331	40
30	57308		52498095	31	61081	36	37012	06	12657	30
40	61352		90762	30	50544	36	40218	07	09983	20
50	65396	43	83432	29	40008	36	43424	07	07308	10
29 0	69439	44	76103	28	29472	35	46631	07	04634	031
10	73483	43	68775	17	18937	36	49838	08	01959	50
20	77526	44	61447	17	08401	34	53046	07	83399284	40
30	81570	43	54120	16	41297867	35	56253	08	96609	30
40	85613		46793	16	87331	34	59461	08	93934	20
50	89656		39467		76798		62669		91258	10
60	93699		32141		66264		65877		88582	030

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[S.M.]

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M. S.	Sinus.	D.	Logarith.	D.	Difference.	D.	Logarith.	D.	Sinus.	D.
30 0	55193699	42	59432141	25	41266264	4	48165877	09	83388582	60
10	97741	43	24816	25	57730	4	69086	10	85906	50
20	55101784	42	174921	24	45196		72196	09	83220	40
30	05826	43	10169	23	34064	12	75505	09	80554	30
40	09869	43	59302848	71	2413	10	78715	10	77877	20
50	13911	40	95527	21	1360	11	81925	11	75200	10
31 0	17953	41	28207	20	03071	10	85136	12	72523	025
10	21995	41	80888	19	4119254	10	88347	12	69846	50
20	26037	41	73569	18	82011	10	91559	11	67169	40
30	30078	42	66251	17	71481	19	94770	11	64491	30
40	34120	41	58934	16	60952		97982	12	61814	20
50	38161	42	51617	15	50422		18201194	11	59236	10
32 0	42203	41	44301	14	39894	28	04407	14	56458	028
10	46244	41	36981	13	29366	28	07620	14	53779	50
20	50285	41	29672	12	18835	27	10833	14	51101	40
30	54326	40	22358	11	08311	28	14047	15	48422	30
40	58367	40	15045	10	41097784	27	17261	15	45743	20
50	62407	41	07735	9	87255	26	20476	15	43064	10
33 0	66448	40	00422	8	76731	26	2369	16	40385	027
10	70488	40	59293111	7	66205	25	26908	16	37705	50
20	74528	41	85801	6	55680	25	3012	16	35026	40
30	78569	40	78493	5	45155	24	33337	17	32346	30
40	82609	39	71184	4	34631	24	36555	17	29866	20
50	86648	40	63877	3	2410	23	39770	17	26985	10
34 0	90688	39	56577	2	13580	22	42987	18	24305	026
10	94728	39	49266	1	03062	22	46204	18	21620	50
20	98767	40	41961	0	40992535	22	49421	19	18943	40
30	55302807	39	34655	0	82017	21	52640	19	16262	30
40	06846	38	27353	0	71495	21	55858	20	13581	20
50	10885	38	20050	0	60973	20	59077	20	10900	10
35 0	14924	38	12747	0	50451	20	62256	21	08218	025
10	18963	38	05445	0	39929	21	65516	21	05526	50
20	23001	39	59198144	0	29408	20	68736	21	02854	40
30	27040	38	90844	7	18888	18	71956	21	00172	30
40	31078	39	83545	7	08368	18	75177	20	83197490	20
50	35117	38	76247	97	40897850	18	78397	21	94807	10
60	39155		68950		87332		81618		92124	0 24

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinu.	D.
36 °	55339155	4038	59168950	7196	40887332	17	18181618	11	83292224	83
10	43193		61654		76815	18	84839	22	89441	50
20	47131		54358		66297	17	88061		86758	40
30	51269		47063	95	55780	18	91323		84074	30
40	55306	37	39768		45262	18	94506		81395	20
50	59344	38	32474	94	34745	100	97729	23	78700	10
37 °	63381	37	25180		24228	18300952			76025	023
10	67419	38	17887	93	13711		04176	14	73335	50
20	71456	37	10595	92	03196		07390	23	70654	40
30	75493		03305	90	40792682	14	10623	14	67970	30
40	79530		59096015	85	32168		13847		65285	85
50	83566	34	88726	88	71654	13	17072	25	62600	10
38 °	87603	37	81438	87	61141		20197		59915	022
10	91639	36	74151	86	50628	11	23523	26	57230	50
20	95676	37	66865		40117	12	26748	25	54544	40
30	99712	36	59579	85	29605	11	29974		51858	30
40	55403748		52194		19094	12	33200		49172	20
50	07784		45009	84	08582	11	36427	27	46486	10
39 °	11810		37725	83	40698071		39654		43800	021
10	15856		30442	82	87560	09	42882	28	41113	87
20	19891	35	23160	81	77051		46109	27	38427	86
30	23927	36	15879	80	66542	08	49337	28	35740	87
40	27962	35	08599		56034	09	52565		33053	30
50	31997		01319	79	45525	08	55794	29	30365	20
40 °	36032		58994040	78	35017		59023		27678	88
10	40067		86762	77	24509	06	62253	30	24990	88
20	44102		79485		14003	07	65482	29	22302	50
30	48137	34	72208	76	03496		68712	30	19614	40
40	52171	35	64932	75	40592989	06	71943	31	16926	30
50	56206	34	57657		82483		75174		14237	20
41 °	60240		50382	74	71977	05	78405		11548	10
10	64274		43108	73	61472		81636		08859	019
20	68308		35835	72	50967	04	84868	32	06170	50
30	72342		28563	71	40463	03	88100		03481	40
40	76376		21292		29960	04	91332		00792	30
50	80409	33	14021	70	19456	03	94565	33	83198102	20
60	84443	34	06751		08953		97798		95412	10

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
42 °	55484441	403	58906751	69	40508953	03	18397798	35	83195412	90	60
10	88476		58899482	68	40498450	02	18401031	34	92722	90	50
20	92509		92214	7165	87948	01	04266	33	90031	91	40
30	96542		84247	77447		02	07570	35	87341	91	30
40	55500575		77680	66945		01	10735	34	84651	90	20
50	04608		70414	56445		00	13969	35	81950	1091	10
43 °	08641		63148	65	45944	10501	17104	35	79269		017
10	12674		55883	64	35444	10501	20439	36	76578		50
20	16706	32	48619	63	24944	10501	23675	36	73886	92	40
30	20738		41356	62	14445	10490	26911	37	71194	91	30
40	24770		34094	61	03946	10490	30148	38	68503	91	20
50	28802		26833	60	40393448	97	33385	39	65811	92	10
44 °	32834		19573	59	82951	97	36622	38	63119	93	016
10	36866		12314	58	72454	96	39860	39	60426	93	50
20	40898	31	05055	57	61957	95	43098	40	57734	94	40
30	44929	32	58797797	56	51460	94	46337	41	55041	94	30
40	48961	31	90539	55	40964	93	49575	42	52348	95	20
50	52992		83282	54	30468	92	52814	43	49655	95	10
45 °	57023		76025	53	19972	91	56053	44	46961	96	015
10	61054		68769	52	09476	90	59293	45	44268	96	50
20	65085		61514	51	40298981	89	62533	46	41574	97	40
30	69116		54260	50	88486	88	65774	47	38880	97	30
40	73147	30	47007	49	77993	87	69014	48	36186	98	20
50	77177		39755	48	67500	86	72255	49	33491	98	10
46 °	81207	35	32504	47	57008	85	75496	50	30797	99	014
10	85238	30	25254	46	46516	84	78738	51	28102	99	50
20	89268		18004	45	36014	83	81980	52	25407	99	40
30	93298		10755	44	25533	82	85222	53	22712	99	30
40	97328		03507	43	15041	81	88465	54	20017	99	20
50	55601357	29	58606255	42	04551	80	91707	55	17321	99	10
47 °	05387	30	89011	41	10194061	79	94950	56	14625	99	013
10	09416	29	81765	40	83572	78	98193	57	11929	99	50
20	13446	30	74520	39	73083	77	18501437	58	09233	99	40
30	17475	29	67275	44	62594	76	04681	59	06537	99	30
40	21504		60031	43	52105	75	07926	60	03841	99	20
50	25533		52788	42	41617	74	11171	61	01144	99	10
60	29562		45545	41	31128	73	14417	62	83098447	99	012

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M. S.	Sinns.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinns.	D.
48 0	55629562	28	58645545	42	40131128	88	18514417	46	83698447	60
10	33590	28	38363	42	20640	88	17663	46	95740	50
20	37619	29	31062	41	10153	87	20909	47	93053	40
30	41647	28	23822	40	40099666	86	24156	46	90355	30
40	45675	29	16582	38	89180	85	27401	46	87657	20
50	49704	28	09344	36	78695	84	30649	47	84959	10
49 0	53732	27	02107	36	68211	83	33896	49	82261	0 11
10	57759	28	58594870	36	57726	82	37144	50	79563	50
20	61787	27	87634	35	47242	81	40392	51	76865	40
30	65815	27	80398	35	36758	80	43640	50	74166	30
40	69842	28	73163	34	26174	79	46889	49	71467	20
50	73870	27	65929	34	15791	78	50138	50	68768	10
50 0	77897	27	58695	33	05307	77	53388	50	66069	0 10
10	81924	27	51462	32	39994824	76	56638	51	63370	50
20	85951	26	44230	31	84341	75	59889	51	60670	40
30	89978	26	36995	30	73860	74	63139	50	57970	30
40	94004	27	29768	29	63378	73	66390	51	55270	20
50	98031	26	22559	28	52898	72	69641	52	52570	10
51 0	5570157	27	15311	27	42415	71	72892	52	49869	0 9
10	06084	26	08083	27	31939	70	76144	53	47169	50
20	10110	25	00856	26	21460	69	79396	54	44468	40
30	14136	25	58493629	25	10981	68	82648	53	41767	30
40	18162	24	86403	24	00507	67	85901	54	39066	20
50	22188	23	79278	23	10890024	66	89154	55	36364	10
52 0	26213	23	71954	23	79546	65	92408	54	33663	0 8
10	30239	22	64731	22	69069	64	95662	55	30961	50
20	34264	21	57508	21	58591	63	98917	56	28259	40
30	38289	20	50286	20	48115	62	10602171	57	25557	30
40	42315	19	43065	19	37639	61	05426	58	22854	20
50	46340	18	35844	18	27163	60	08681	59	20152	10
53 0	50364	17	28624	17	16687	59	11937	60	17449	0 7
10	54389	16	21405	16	06212	58	15193	61	14746	50
20	58414	15	14187	15	30795737	57	18450	62	12043	40
30	62438	14	06970	14	85264	56	21706	63	09330	30
40	66463	13	58399753	13	74790	55	24963	64	06636	20
50	70487	12	92537	12	64317	54	28220	65	03932	10
60	74511	11	85321	11	53543	53	31478	66	01229	0 6

Grad. 56.

S.M.

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Grad. 33.

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M. S.	Sinus.	D.	Logarith.	D.	Differens.	D.	Logarith.	D.	Sinus.	D.
54 °	5774511	24	5838531	15	39753843	73	18631478	58	83001229	60
10	78535		78106	15	43370		34736	58	81998524	05
20	82559		70892	14	32897		37995	59	95820	04
		23		13		10471		58		
30	86582		63679		21426		41253	58	93116	30
40	90606	23	56467		11955		44512	59	90411	20
50	94629	24	49255	10	01484	70	47771		87706	10
55 °	98653	4023	42045		39691014		51031	60	85001	05
10	55802676		34835		80544		54291		82296	50
20	06699		27626	09	70074	68	57552	61	79590	06
		22		08		69		60		
30	10722		10418		59606	69	60812	61	76884	30
40	14744	23	13210		49137	68	64073	61	74178	20
50	18767		06003	07	38669	69	67334	62	71472	10
56 °	22790	22	58298796	06	28200	68	70596		68766	04
10	26812		91590	05	17732		73858		66060	50
20	30834		84385	04	07264	67	77121	63	63353	07
		22		03		66				
30	34856		77181		39596797	67	803	64	60646	30
40	38878		69978		86331	66	83647		57939	20
50	42900		62775	01	75864	67	86911	64	55232	10
57 °	46922	21	55574		65400	64		63		
10	50943		48373	00	54955	65	90174	64	52524	03
20	54965	22	41173		44471	64	93438		49817	50
		21		7199			96702	65	47109	08
30	59986		33974		34007		99967		44401	30
40	63007		26775		23543		18703232	66	41693	20
50	67028		19577	98	13079		06498		38984	10
58 °	71049		12379	97	02635		09764	67	36276	02
10	75070		05182		39492154	62	13031	67	33567	50
20	79091	20	58197986	96	81689		16297	66	30858	40
		21		95						
30	83111		90791		71227	61	19564	3267	28149	30
40	87132	20	83597	94	60766	60	22831		25439	20
50	91152		76404	93	50306		26098		12730	10
59 °	95172		69212	92	39846	59	29366	68	10010	01
10	99192		62021	91	29387	60	32634	69	17310	50
20	55903212		54830	90	18927	59	35903		14600	40
		19		89						
30	07232		47640		08468		39172	70	11890	30
40	11252		40450		39398009	57	42461		09179	20
50	15271		33261	88	87550		45712	69	06468	10
60	19290		26073		77093		48980		03757	00

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S.M.

Grad. 34.

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D	Sinus.	D.
0	55919290	58126073	39377693	18748080	70	82903757	11 60
10	23310	18885	66636	52150	71	01046	11 50
20	27329	1700	56173	55521	72	82898335	12 40
30	31348	04515	45723	58794	73	97623	12 30
40	35366	5829730	35567	62063	74	92912	11 20
50	39385	40146	24811	65335	75	90200	11 10
1	0	43404	82964	14355	55	68607	13 05
10	47422	75779	03900	71879	56	71879	14 00
20	51440	68597	3929344	75152	57	82063	14 40
30	55459	61416	82991	78425	58	79350	13 30
40	59477	54130	71537	81699	59	76637	12 20
50	63495	4705	62083	84973	60	73924	11 10
2	0	67512	39878	88247	61	71211	10 05
10	71530	52700	41178	91522	62	68497	14 50
20	75547	25523	30727	94796	63	65784	13 40
30	79565	18347	20176	98071	64	63070	14 30
40	83582	11171	09825	18801346	65	60356	20
50	87599	03996	39299374	04622	66	57641	19 10
3	0	91616	57996821	07898	67	54927	14 05
10	95633	89647	78472	11175	68	52212	15 50
20	99650	82474	68022	14452	69	49497	40
30	56003666	75302	57575	17725	70	46782	30
40	07683	68131	47124	21057	71	44067	20
50	11699	60980	36676	24284	72	41352	10
4	0	15715	53790	27562	73	38636	056
10	19731	46611	25781	30840	74	35920	10
20	23747	39453	05334	34119	75	33204	40
30	27763	32285	3904887	37398	76	30488	30
40	31779	25118	24440	40678	77	27773	20
50	35794	17952	73594	43958	78	25055	10
5	0	39810	10786	47238	79	22338	055
10	43825	03621	53102	50519	80	19621	50
20	47840	57896457	42657	53800	81	16904	40
30	51855	82294	32213	57081	82	14187	30
40	55870	82132	21769	60363	83	11469	20
50	59885	74970	11326	63644	84	08751	10
60	63899	67809	00883	66926	85	06033	054

Grad. 55.

S. M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
6 0	56963899	15	57867809	60	39009883	1	18866916	81	82806033	18	60
10	67914	14	60649	60	38990441	2	70208	82	03315	18	50
20	71918	15	53490	7159	79999	3	73491	83	00597	19	40
30	75943	14	46333	58	69557	4	76774	84	82797878	18	30
40	79957	13	39173	57	59115	5	80058	85	95160	19	20
50	83971	13	32015	56	48673	6	83341	86	92441	19	10
7 0	87984	14	24858	57	38231	41	86627	87	89722	10	053
10	91998	13	17702	56	27790	40	89912	88	87002	19	50
20	96012	13	10547	55	17350	39	93197	86	84283	20	40
30	56109025	14	03393	54	06910	38	96483	85	81563	20	30
40	04938	13	57796239	53	38896471	37	99768	86	78843	20	20
50	08052	13	89086	52	86032	36	18903054	87	76123	21	10
8 0	12065	12	81934	51	75594	35	06340	88	73403	21	052
10	16077	13	74783	50	65156	34	09627	87	70682	20	50
20	20090	12	67632	49	54718	33	12914	88	67962	21	40
30	24103	13	60482	48	44280	32	16201	89	65241	21	30
40	28115	12	53333	47	33844	31	19489	88	62520	21	20
50	32128	11	46185	46	23408	30	22777	89	59798	21	10
9 0	36140	11	39037	45	12973	29	26065	90	57077	22	051
10	40152	11	31890	44	02536	28	29354	91	54355	22	50
20	44164	11	24744	43	38792101	27	32643	92	51633	23	40
30	48176	11	17599	42	81687	26	35932	93	48511	23	30
40	52188	11	10455	41	71233	25	39222	94	46189	24	20
50	56199	11	03311	40	60799	24	42512	95	43467	24	10
10 0	60211	11	57696168	39	50365	33	45803	96	40744	25	050
10	64222	11	89026	42	39932	32	49094	97	38021	25	50
20	68233	11	81885	41	29499	31	52386	98	35298	26	40
30	72244	11	74744	40	19067	30	55677	99	32575	26	30
40	76255	11	67604	39	08635	29	58969	100	29852	27	20
50	80266	11	60464	38	38698103	28	62261	101	27128	27	10
11 0	84277	10	53325	37	87772	27	65553	102	24404	28	045
10	88287	11	46187	36	77341	26	68846	103	21680	28	50
20	92298	10	39050	35	66911	25	72139	104	18956	29	40
30	96308	10	31914	34	56481	24	75433	105	16232	29	30
40	56100318	10	24778	33	46051	23	78727	106	13507	30	20
50	04328	10	17643	32	35622	22	82021	107	10782	30	10
60	08338	10	10508	31	25192	21	85316	108	08057	31	048

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S.M.

Grad. 34.

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D. Sinus.	D.
12 0	56208338	57610508	38625192	18935346	82708057	60
10	12348	03374	14763	88011	05332	50
20	16357	09	04334	91907	01607	30
30	20367	89109	38593907	95202	99881	20
40	24376	81978	83480	98428	97156	10
50	28385	74847	73053	19001794	94430	0
13 0	32394	67718	62627	05051	91704	4
10	36403	60590	52202	08388	88977	50
20	40412	53462	41776	11686	86251	40
30	44421	46335	31352	14983	83524	30
40	48429	39208	20927	18281	80797	20
50	52438	32082	10503	21579	78079	10
14 0	56446	24956	00078	24878	75343	46
10	60454	17831	38489654	28177	72615	50
20	64462	10707	79230	31477	69888	40
30	68470	03584	68807	34777	67160	30
40	72478	07	58385	38077	64432	20
50	76485	08	47963	41378	61703	10
15 0	80493	07	37543	44678	58975	45
10	84500	75102	27123	47979	56246	50
20	88507	67983	16703	51280	53517	30
30	92514	60865	06283	54582	50788	20
40	96521	53747	38395863	57884	48059	10
50	56300528	46625	85442	61187	45330	0
16 0	04535	39512	75022	64490	42600	44
10	08548	32396	64602	67794	39870	50
20	12541	25281	54184	71097	37140	40
30	16554	18167	43766	74401	34410	30
40	20560	11054	33345	77705	31680	20
50	24566	0394	22932	81009	28949	10
17 0	28572	57396825	12515	84314	26218	43
10	32578	89717	02098	87619	23487	50
20	36584	82601	38291681	90925	20756	40
30	40589	75495	81265	94231	18025	30
40	44595	68387	70850	97537	15293	20
50	48600	61275	60435	19100844	12561	10
60	52605	54172	50021	04151	15829	42

Grad. 55.

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M S	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18. 0	56352605	05	57354171	7106	32250021	14	19704151	08	82609819	60
10	56600		47066		39607		07459	07	07097	32
20	60615		39900		29194		10766	08	04365	40
30	64619	04	32855	05	18781		14074		01632	32
40	68624	05	25750		08368		17382		82598890	20
50	72628	04	18646	04	38197955		20691	09	96167	33
9. 0	76633	05	11543	05	87543	12	24000		93434	041
10	80637	04	04441	02	77131		27310	11	90700	34
20	84641	04	57197340	01	66720		30620		87967	33
30	88645		90239	00	56309		33930		85133	30
40	92649		83139	00	45898		37241	11	82499	20
50	96652	03	76040	00	35489	09	40551	11	79765	10
20. 0	56400656	04	68941	98	25079	10	43862		77031	35
10	04659	03	61843	97	14670	09	47173		74296	50
20	08662		54746	96	04261	08	50485	12	71562	40
30	12665		47650		38093853	09	53797		68825	30
40	16668		40554	95	83444	08	57110	13	66092	20
50	20671		33454	94	73036	07	60423		63357	10
21. 0	24674		26365	93	62625	06	63736		60621	36
10	28677		19272		52222	05	67050	14	57884	30
20	32679	01	12175	92	41815	04	70364		55150	20
30	36681		05087	91	31408	03	73675	15	52412	30
40	40684	03	57197996	90	21003	02	76993	14	49677	20
50	44686	01	90905	90	10597	01	80308	13	46941	10
22. 0	48688	01	83815	89	00192	05	83623		44200	30
10	52689	02	76726	88	37989787	04	86935	16	41467	50
20	56691		69632	88	79383	03	90255		38731	40
30	60693	01	62550	87	68978	02	93572	17	35993	38
40	64694		55463	86	58575	01	96888	16	33256	37
50	68695		48377		48172	00	19200205	17	30518	38
23. 0	72698		41392	85	37765		03522		27781	37
10	76697		34207	84	27366	02	06840	18	25042	38
20	80695		27122	83	16964		10158		22304	39
30	84699		20034	82	06562	01	13477	19	19566	38
40	88700	01	12957	81	37896162	00	16795	18	16828	30
50	92700	00	05875		85761	01	20114	19	14089	39
60	96700		57098794	81	75361	00	23433		11350	30

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D. Sinus.	D.
24 0	56496700	57098794	37875361	19223433	82511370	60
10	56500700	91714	64961	26753	080113	50
20	04700	84635	54562	30073	058714	40
30	08700	77556	44163	33393	03132	30
40	12700	70478	33764	36714	00392	20
50	16700	63401	23366	40035	214976	10
25 0	20699	56324	12967	43357	94912	035
10	24699	49248	02569	46679	92172	50
20	28698	42173	37792172	50001	89431	40
30	32697	35095	81776	53323	86691	30
40	36696	28026	71380	56646	83950	20
50	40695	20953	60984	59969	81209	10
26 0	44694	13881	50588	63293	78467	034
10	48692	06810	40193	66617	75726	50
20	52691	56999740	29798	69942	72984	40
30	56689	92670	19404	73266	70242	30
40	60688	85601	09010	76591	67500	20
50	64686	78533	37698617	79916	64758	10
27 0	68684	71465	88224	83241	62016	033
10	72681	64398	77831	86567	59273	50
20	76679	57332	67435	89893	56530	40
30	80677	50267	57047	93220	53787	30
40	84674	43202	46655	96547	51044	20
50	88671	36138	36264	99874	48301	10
28 0	92668	29075	25873	19303102	45557	032
10	96665	22013	15483	06530	42813	50
20	56600662	14951	05092	09859	40069	40
30	04659	07890	37594701	13188	37325	30
40	08656	00830	84313	16517	34581	20
50	12652	56893770	73923	19847	31836	10
29 0	16648	86711	63535	23176	29091	031
10	20645	79653	53147	26506	26346	50
20	24641	72596	42759	29837	23601	40
30	28637	65535	32371	33168	20856	30
40	32632	58483	21984	36499	18111	20
50	36628	51428	11597	39831	15365	10
60	40624	44373	01210	43163	12619	030

Grad. 35.

S. M.

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Grad. 34.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D	Logarith.	D.	Sinu.	D.	
30. 0	56640624	95	56844373	44	37501210	87	19343163	33	82412619	46	60
10	44819		37319	44	37490823	10385	46496	33	09873	46	50
10	48614		30266	53	80438		49828	32	07126	47	40
		96		7052				33		46	30
30	52610	95	23214		70053		53161		04380	2747	20
40	56605	94	16162		59668		56494	34	01633	10	10
50	60599	95	09111	51	49283		59828	34	82398886		
1 0	64594		02060	50	38898		63162	35	96139		029
10	68589	94	56795010	49	28513	83	66497	34	93392		50
20	72583	95	87961	48	18130		69831	35	90645	48	40
		1004		47	07747	81	73166		87897	30	30
30	76578		80913	46	37397365		76501	36	85149	20	20
40	80572		73866		86983		79837		82401	10	10
50	84566		66820								
32 0	88550		59774	45	76601		83173	37	79653	49	028
10	92554	93	52729	44	66219	80	86510	36	76904	50	50
20	96547	94	45685	43	55839		89846	37	74156	48	40
		1004								49	30
30	56700541	93	38642		45455		93183		71407	20	20
40	04534	94	31599	42	35079		96520	38	68658	10	10
50	08528	93	24557		24698		99858		65909		
33 0	12521		17515	41	14319		19403196	39	63159	50	027
10	16514		10474	40	03939	78	06535	38	60410	45	50
20	20507	9	03434	39	37293561		09873	39	57669	50	40
		1004									
30	24499	93	56696395	38	83183	77	13212		54910	51	30
40	28492	92	89357	37	72806		16551	40	52160	50	20
50	32484	91	82320	36	62429		19891	41	49409	50	10
		1004								51	026
34 0	36477	92	75283	35	52052		23231		46655	51	50
10	40469		68247	34	41676		26571	41	43908	50	40
20	44461		61212	33	31300		29912		41157		
30	48453		54177	32	20924		33253	42	38406	52	30
40	52445		47143	31	10548		36595		35655	20	20
50	56437	91	40110	30	00173	75	39937		32903	10	10
		1004									
33 0	60428		33077	32	37189798		43279	43	30151		025
10	64419	92	26045	31	79423	74	46622		27399	50	50
20	68411	91	19014	30	69049		49965	44	24647	40	40
30	72402		11984	29	58675	72	53309	43	21895	53	30
40	76393		04955	28	48303	73	56652	44	19142	52	20
50	80384		56597926	27	37930	72	59996		16390	53	10
60	84375		90898		27558		63340		13637		0 24

Grad. 55.

[S.M.]

Grad. 34.

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M. S.	Sinus.	D.	Different.	D.	Different	D. Logarith.	D	Sinus.	D
36 0	56784375	90	56590898		37127552	19443340		82313637	60
10	88365	90	83871	27	17182	66685	45	10884	50
10	92356	90	76845	26	06815	70030	46	08131	40
30	96346	1990	69819	26	37096443	73376		05377	30
40	56800336		6179425	25	86073	76721	45	02623	20
50	04326		55769	24	75702	80067	46	81299869	10
37 0	08316		4874523	23	65332	83413		97115	023
10	12306		4171222	22	54962	86760		94361	50
20	16296	89	34700		44593	90107	347	91607	40
30	20285	90	2767821	21	34224	93454		88852	30
40	24275	89	2065720	20	23855	96801	48	86097	20
50	28264		1363719	19	13487	19500150		83342	10
38 0	32253		0661818	18	03119	03499	49	80587	022
10	36242		56497600		36992752	06848		77832	50
20	40231		9258217	17	82384	10198	50	75076	40
30	44220	88	85565		72018	13547	49	72320	30
40	48208	89	7854816	16	61651	16847	50	69564	20
50	52197	88	7153215	15	51285	20247		66808	10
39 0	56185		6451714	14	40920	23597		64052	021
10	60173		5750313	13	30555	26948	51	61295	50
20	64161		50490		20191	30299	64	58538	40
30	68141		4347712	12	09826	33651	52	55781	30
40	72137		36465		36899462	37003		53024	20
50	76125		2945311	11	89098	40355		50267	10
40 0	80112	87	2244210	10	78734	43708	53	47510	020
10	84100	87	1543209	09	68371	47061		44752	50
20	88087	87	0842308	08	58008	50415	54	41994	40
30	92074		01415		47647	53768	54	39236	30
40	96061		56394407	07	37285	57122		36477	20
50	56900048		87400		26924	60476	55	33719	10
41 0	04035	86	8039306	06	16562	63831		30966	019
10	08041	87	7338705	05	06201	67186		28201	50
20	12008	86	6638204	04	36795840	70542	56	25442	40
30	15994		5937803	03	85480	73898		22683	30
40	19980		5237502	02	75121	77254		19924	20
50	23966		45373		64762	80611	57	17164	10
60	27952		38371		54404	83967	56	14404	018

Grad. 55.

S. A. J.

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Grad. 34.

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M. S.	Sinns.	D.	Logarith.	D.	Difference.	D.	Logarith.	D.	Sinns.	D.
42	56927952	86	56338371	7001	36754404	58	19583967	57	82214404	60
10	51938	86	31370	7001	44046	58	87324	57	11644	60
20	35924	85	24370	000	33689	57	90681	58	08884	40
30	39909	86	17370	6999	23331	58	94039	58	06125	61
40	43895	86	10371	6999	12974	10357	97397	59	03363	60
50	47880	85	03373	98	02617	57	19600756	59	00602	10
43	51865	85	56296375	97	36692260	55	04115	60	82197841	0 17
10	55856	84	89378	96	81903	55	07475	59	95080	50
20	59835	84	82382	95	71548	54	10834	60	92318	61
30	63820	83	75387	94	61193	54	14194	61	89557	30
40	67804	83	68392	93	50838	53	17554	62	86795	20
50	71785	84	61398	92	40483	53	20915	61	84033	10
44	75773	84	54405	91	30129	52	24276	62	81271	0 16
10	79757	83	47413	91	19775	53	27638	63	78508	50
20	83741	83	40421	91	09422	52	30999	61	75746	62
30	87725	83	33430	90	36599069	51	34361	63	72983	30
40	91709	83	26440	89	88717	53	37723	64	70220	20
50	95693	83	19450	88	78364	52	41086	65	67457	10
45	99676	84	12461	88	68012	51	44449	66	64694	0 15
10	57003660	83	05473	87	57661	50	47812	67	61930	50
20	07643	83	56198486	86	47310	49	51176	68	59167	40
30	11626	82	91499	85	36959	48	54540	69	56403	30
40	15609	82	84513	84	26608	47	57905	70	53639	20
50	19592	82	77528	83	16258	46	61270	71	50874	10
46	23575	82	70543	82	05908	45	64635	72	48110	0 14
10	27557	81	63559	81	6495558	44	68001	73	45345	50
20	31539	81	56576	80	85209	43	71367	74	42580	40
30	35522	81	49594	79	74860	42	74734	75	39815	30
40	39504	81	42612	78	64512	41	78100	76	37050	20
50	43486	81	35631	77	54164	40	81467	77	34284	10
47	47468	81	28651	76	43817	39	84834	78	31519	0 13
10	51450	81	21672	75	33470	38	88202	79	28753	50
20	55431	81	14693	74	23123	37	91570	80	25987	40
30	59413	81	56007715	73	12776	36	94939	81	23221	30
40	63394	81	00737	72	02430	35	98307	82	20454	20
50	67376	81	93760	71	36192084	34	19701676	83	17688	10
60	71357	81	86784	70	81739	33	05045	84	14921	0 12

Grad. 55.

S. M.

Grad. 34.

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M. S.	Sinus.	D.	Different.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48 0	57071357	81	56086784	75	36381739	45	19705045	70	82114921	60
10	75338		79809	75	71394	45	08415	70	12154	50
20	79319	80	72835	74	61050	44	11785	71	04387	40
30	83299	81	65861	73	50705	45	15150	72	06615	30
40	87280	80	58888	73	40362	44	18526	71	08852	20
50	91260	81	51915	72	30018	43	21897	70	01084	10
49 0	95241	7980	44943	71	19675		25208	72	21098316	0 12
10	99221		37972	70	09332	42	28640		95548	50
20	57103201		31002	69	36198940		32012	73	92780	40
30	07181		24033	68	88648	40	35335	72	90011	30
40	11161		17065	67	78308	41	38757	73	87242	20
50	15140	79	10097	67	67967	41	42130	73	84473	10
50 0	19120		03130	66	57627	40	45503	74	81704	0 10
10	23095	79	55996164		47287	40	48877		78935	50
20	27078		89198	65	34947	39	52251	75	76165	40
30	31057		82235	64	26008		55625	75	73396	30
40	35036		75269	63	16269		59000	76	70626	20
50	39015		66305	63	05530		62375	76	67856	10
51 0	42994		61342	62	36195591	38	65751	76	65086	0 9
10	46977		54380	61	85253		69127	77	62315	50
20	50951	78	47419		74915	37	72504	76	59544	40
30	54924		40458	60	64578		75880	77	56773	30
40	58907		33496		54241		79257	77	54003	20
50	62885		26538	59	43904		82634	78	51231	10
52 0	66863		19579	58	33567	36	86012		48460	0 8
10	70841		12621	57	23231		89390	3379	45688	50
20	74819		05664	56	12895	35	92769	79	42916	40
30	78796		55898708		02560		96148	80	40147	30
40	82773	78	91752	55	36092225		99527	80	37372	20
50	86751	77	84797		81890	31	1980407	79	34600	10
53 0	90728		77842	54	71556		06286	80	31827	0 7
10	94705	76	70888	53	61222		09666	81	29054	50
20	98681	77	63933	52	50888		13047		26281	40
30	57202658		56983	51	40555	39	16428		23508	30
40	06635		50030		30223	32	19809	82	20735	20
50	10611	76	43081	50	19590	33	23191		17961	10
60	14587		36131		09558	32	26573		15188	0 6

Grad. 55.

S.M.

Grad. 34.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54	0 57214587	3976	55836131	69	36009558	32	19826573	84	81015188	60
10	18563		29182	49	35999126		29956	3381	11414	74
20	22539		22233	43	88894	31	33339		09640	40
30	20515		15285	47	78563		30722	84	06865	75
40	30491		08338		68132		40106	83	04091	74
50	34467		01391	46	57902	30	43489		01316	10
55	0 38442	75	55794445	45	47572		46873	84	81998541	0
10	42418	76	87500	44	37243	10329	50257		95766	50
20	46393	75	80556		26914		53642	85	92991	40
30	50368		73611	43	16585		57027		90215	30
40	54343		66669	42	06256		60413	86	87440	20
50	58318		59727		35895928	28	63799		84664	10
56	0 62192	74	52785	41	85600		67185		81888	0
10	66167	75	45844	40	75272		70572	87	78111	50
20	70241	74	38904		64945	27	73959		76335	40
30	74215		31965	39	54619	26	77346		73558	30
40	78189		25026	38	44292	27	80734	88	70781	20
50	82163		18088	37	33967	25	84121	87	68004	10
57	0 86137		11151	36	23642		87509	88	65227	0
10	90111		04215	35	13318	24	90897		62450	50
20	94085		55697280		02994		94286	89	59672	40
30	98058	73	90345	34	35792670		97675		56894	30
40	57302031	74	83411		82346		19901065	90	54116	20
50	06005	73	76477	33	72022		04455		51338	10
58	0 09978		69544	32	61698		07846		48560	0
10	13951		62612	31	51375	23	11237		45781	50
20	17923		55681		41053	22	14628		43003	40
30	21896		48750	30	30730	23	18010	92	40224	30
40	25868		41820	29	20409	21	21411	91	37444	20
50	29841		34891	28	10088		24803	93	34665	10
59	0 33813		27963		35699768	20	28195		31886	0
10	37785		21035	17	89447	21	31588	13	29108	50
20	41757		14108	16	79127	20	34981		26336	40
30	45729		07182		68807		38375	94	23546	30
40	49701		00256	25	58487		41769		20766	20
50	53672		5593331	24	48168	19	45163		17989	10
60	57644		86407		37850	18	48557		15204	0

Grad. 55.

S.M.

Grad. 35.

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M. S.	Sinus.	D.	Different.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	57357644		55586407		35637850	18	19948557		81915204	60
10	61615	3971	79484	6923	27532		51952	3195	12423	50
20	65586		72561	11	17214		55347		09642	40
30	69557		65639	21	06897	1317	58742		06861	30
40	73528		58718		35596580		62138	96	04080	20
50	77499		51797	10	86263		65534	97	01298	10
1	81469	70	44877	19	75946	16	68931		81848516	059
10	85440	71	37958	18	65630		72328	98	95734	50
20	89410	70	31040		55314	15	75726	97	92952	40
30	93380		24122	17	44999		79123	98	90170	30
40	97350		17105		34684		82521		87387	20
50	57401320		10288	16	24369		85919	99	84604	10
2	05290		03372	15	14054	14	89318		81821	058
10	09260	69	55496457	14	03740		92717	3400	79038	50
20	13229	70	89543	13	35493426	13	96117		76255	40
30	17199	69	82630	12	83113		99517	61	73471	30
40	21168		75717		72800	10002917	06318	00	70687	20
50	25137		68805	11	62487		09718	01	67903	10
3	29106		61893	10	52175	11	13119	01	65119	057
10	33073	68	54982	09	41863		16521		62335	50
20	37044	69	48072	08	31551	10	19923	03	59550	40
30	41012	69	41163	07	21240	10	23325		56766	30
40	44981	68	34255	06	10930	11	26728	03	53981	20
50	48949		27347	05	00619	10	30131		51196	10
4	52917		20440	04	35390309		33535	04	48410	056
10	56885		13534	03	79999	08	36938	03	45625	50
20	60853		06629	02	69691	09	40342	04	42839	40
30	64821		55399724	01	59382	08	43746	05	40053	30
40	68789	67	92820	00	49074	09	47151		37267	20
50	72756	68	85916	03	38765	08	50556	06	34481	10
5	76724	67	79013	02	28457		53962	07	31695	055
10	80691		72111	01	18149	06	57367	06	28908	50
20	84658		65210	00	07843	07	60773	07	26121	40
30	88625		58309		35297536	06	64179		23334	30
40	92592		51409		87230		67586	07	20547	20
50	96559	66	44510		76924		70993		17755	10
60	57500525		37611		66618				14971	054

Grad. 34.

J. M.

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Grad. 35.

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M. S.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	Sinus.	D.
6. 0	57500525	67	55337611	98	35266618	05	20070993	07	81814971	60
10	04492	67	30713	87	56313	05	74400	07	12184	50
20	08458	67	23816	96	46008	04	77808	08	09396	40
30	12424	65	16920	96	35704	05	81216	3409	06608	30
40	16390	66	10024	95	25399	04	84625	10	03819	20
50	20356	65	03129	94	15095	10303	88034	10	01031	10
7 0	24322	65	55296235	93	04792	02	91443	11	81798242	053
10	28287	66	89342	91	35194489	01	94853	10	95453	50
20	32253	65	82449	92	.84166	01	68263	11	92664	40
30	36218	64	75557	89	73883	02	20101674	11	89875	30
40	40183	65	68665	91	63581	01	05084	10	87085	20
50	44148	64	61774	90	53279	01	08491	11	84295	10
8 0	48113	64	54884	89	42978	00	11906	12	81505	052
10	52078	64	47995	88	32677	00	15318	13	78715	50
20	56043	64	41106	87	22376	00	18730	14	75925	40
30	60008	64	34218	87	12076	00	22142	13	73135	30
40	63972	63	27331	86	01776	00	25555	14	70344	20
50	67936	63	20444	85	35091476	00	28968	15	67553	10
9 0	71900	63	13558	85	81176	10199	32382	14	64762	051
10	75864	63	06673	84	70877	98	35796	15	61971	50
20	79828	63	55199785	83	60578	97	39211	16	59179	40
30	83792	63	92905	82	50280	96	42625	17	56388	30
40	87756	63	86022	81	39982	95	46040	18	53596	20
50	91719	63	79140	81	29685	94	49455	19	50804	10
10 0	95682	61	72258	81	19388	94	52870	20	48011	050
10	99645	61	65377	80	09091	93	56286	21	45219	50
20	57603608	61	58497	79	34998795	92	59702	22	42426	40
30	07571	61	91618	78	88495	91	63119	23	39634	30
40	11534	61	44739	77	78203	90	66536	24	36841	20
50	15497	61	37861	76	67908	89	69953	25	34047	10
11 0	19459	61	30984	76	57613	88	73371	26	31254	049
10	23422	61	24108	75	47319	87	76789	27	28461	50
20	27384	61	17232	74	37024	86	80208	28	25667	40
30	31346	61	10357	74	26730	85	83627	29	22873	30
40	35308	61	03482	73	16436	84	87046	30	20079	20
50	39270	61	55096608	73	06142	83	90466	31	17284	10
60	43232	61	89735	73	34895850	82	93885	32	14490	048

Grad. 54.

S.M.

Grad. 35.

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M. S.	Sinus.	D.	Different.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
12 0	57643231		55089735		34895850		10193885		81711450	
10	47193	61	82863	72	85558	92	97305	20	11695	50
20	51155	62	75992	68	75267	91	10200725	21	08900	40
30	55116	3961	69121	70	64975	92	04146	22	06105	30
40	59077		62351	69	54684	91	07567	23	03310	20
50	63038		55381	68	44392	92	10989	24	00514	10
13 0	66999		48512	67	34101	91	14411	25	81697719	0 47
10	70960	60	41644	66	23810	89	17834	26	94923	50
20	74920	61	34777	65	13521	90	21256	27	92127	40
30	78881	60	27910	64	03231	1010	24679	28	89330	30
40	82841		21044	63	34792941	88	28102	29	86534	20
50	86801		14179	62	82653	87	31526	30	83737	10
14 0	90761		07314	61	72364	86	34950	31	80941	0 46
10	94721	59	00450	60	62075	85	38375	32	78144	50
20	98681	58	54993587	59	51787	84	41800	33	75346	40
30	57702641	57	86725	58	41500	83	45225	34	72549	30
40	06600	56	79863	57	31212	82	48651	35	69751	20
50	10560	55	73002	56	20926	81	51076	36	66954	10
15 0	14519		66141	55	10639	80	55502	37	64156	0 45
10	18478	54	59281	54	00353	79	58928	38	61357	50
20	22437	53	52421	53	34690067	78	62355	39	58555	40
30	26396	52	45564	52	79782	77	65782	40	55760	30
40	30355	51	38707	51	69497	76	69210	41	52962	20
50	34313	50	31850	50	59212	75	72638	42	50163	10
16 0	38272		24994	49	48928	74	76066	43	47364	0 44
10	42230	49	18139	48	38644	73	79495	44	44565	50
20	46188	48	11284	47	28360	72	82924	45	41765	40
30	50146	47	04430	46	18076	71	86354	46	38965	30
40	54104	46	54897577	45	07794	70	89783	47	36165	20
50	58062	45	40734	44	34597521	69	93213	48	33365	10
17 0	62020		83872	43	77229	68	96643	49	30565	0 43
10	65977	44	77021	42	76947	67	10300074	50	27764	50
20	69934	43	70171	41	66666	66	03505	51	24964	40
30	73892	42	63321	40	56384	65	06937	52	22163	30
40	77849	41	56472	39	46104	64	10368	53	19362	20
50	81806	40	49624	38	35824	63	13800	54	16560	10
60	85763	39	42776	37	25544	62	17232	55	13759	0 42

Grad. 54.

J.M.

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Grad. 35.

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M. S.	Logarithm.	D.	Different.	D.	Logarithm.	D.	Sinus.	D.	Sinus.	D.	
18. 0	57785762	57	54841776	47	34525544	80	30317232	34	81613759	01	60
10	89719		35929	46	15264	79	20665	34	10957	01	50
20	93676		29083	46	04985	78	24098	34	08156	01	40
30	97632	3956	22238	45	34494707	79	27531	34	05354	03	30
40	57801588		15393	44	84418	79	30965	34	02551	03	20
50	09544		08549	44	74150	10178	34399	35	81599749	02	10
19. 0	09500		01706	43	63872		37834	35	96946	03	04
10	13456		54794863	42	53594		41269	36	94144	01	50
20	17412		88021	42	43316	76	44705	36	91341	03	40
30	21368	55	81180	41	33040	77	48140	36	88537	04	30
40	25323		74339	40	22763	76	51576	36	85734	03	20
50	29278	56	67499	39	12487	75	55012	37	82931	03	10
20. 0	33234	55	60660	38	02211	75	58449	37	80127	100	04
10	37189		53822	38	34391936	76	61886	38	77323	50	
20	41144	54	46985	37	81660	75	65324	38	74519	40	
30	45098	55	40147	37	71385	73	68762	39	71714	05	30
40	49053		33310	36	61110	74	72200	40	68910	04	20
50	53008	54	26474	35	50835	73	75639	39	66105	05	10
21. 0	56962		19639	34	40562	73	79077	38	63300	06	039
10	60916		12805	34	30289	74	82516	40	60495	07	50
20	64860		05971	33	20015	73	85956	40	57690	06	40
30	68824	54	54699138	32	09742	72	89396	41	54885	07	30
40	72778	53	92306	31	34299470	71	92836	41	52079	06	20
50	76732	53	85474	31	89197	72	96277	41	49273	07	10
22. 0	80685		78643	30	78925	71	99718	42	46467	08	038
10	84639	54	71813	30	68653	70	10403160	41	43661	07	50
20	88592	53	64984	29	58383	71	06601	42	40854	06	40
30	92545		58155	28	48112	70	10043	43	38048	07	30
40	96498		51327	28	37842	71	13485	43	35241	08	20
50	57900451		44499	27	27571	70	16928	43	32434	09	10
23. 0	04304		37672	26	17301	69	20371	44	29627	10	03
10	08356	51	30846	26	07031	68	23815	44	26819	07	50
20	12309	53	24021	25	34196762	68	27255	45	24012	08	40
30	16261	52	17197	24	86494		30703	45	21204	09	30
40	20213		10373	23	76226		34147	45	18396	10	20
50	24165		03550	23	65958		37592	45	15588	10	10
60	28117		54596727		55690		41037		12780		02

Grad. 54.

S.M.

Grad. 35.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D
24 0	57928117	51	54596727	21	34155690	68	20641037	6	81512780	60
10	32069	51	89905	21	45422	67	44483	+6	09971	50
10	36021	51	83084	20	35155	67	47925	47	07162	40
30	39972	52	76264	19	24888	63	51376	46	04353	30
40	43924	52	69445	19	14623	66	54822	46	01544	20
50	47875	51	62626	18	04357	66	58269	47	81498735	10
25 0	51826	50	55808	17	34094092	10205	61716	348	95926	035
10	55777	50	48991	17	83827	64	65164	348	93116	50
20	59728	50	42174	16	73562	64	68612	348	90306	40
30	63678	50	35358	15	63298	62	72060	49	87496	30
40	67629	50	28543	15	53034	62	75509	49	84686	20
50	71579	50	21728	14	42770	62	78958	50	81875	10
26 0	75530	49	14914	13	32505	62	82408	49	79065	034
10	79480	49	08101	12	22244	62	85857	50	76254	50
20	83430	49	01289	12	11982	63	89307	51	73443	40
30	87380	49	54494477	11	01719	62	92758	51	70632	30
40	91325	49	87666	10	39991457	61	96209	52	67820	20
50	95279	49	80856	10	81195	61	99661	52	65009	10
27 0	99228	48	74046	9	70934	60	20503112	51	62197	033
10	58003178	48	67237	9	60673	60	06564	52	59385	50
20	07127	48	60429	8	50413	60	10016	53	56573	40
30	11076	48	53622	7	40153	59	13469	53	53750	30
40	15025	48	46815	6	29893	59	16922	54	50948	20
50	18974	48	40009	5	19633	59	20376	54	48135	10
28 0	22922	49	33203	4	09374	58	23829	54	45322	032
10	26871	49	26398	4	39899115	58	27283	55	42509	50
20	30815	49	19594	3	88857	58	30737	55	39696	40
30	34768	48	12791	3	78599	57	34192	56	36882	30
40	38716	48	05988	2	68341	57	37647	56	34068	20
50	42664	47	54399181	1	58083	57	41103	56	31254	10
29 0	46611	48	92385	0	47826	56	44559	57	28440	031
10	50559	48	85584	0	37568	56	48016	56	25626	50
20	54507	47	78784	0	27312	56	51472	57	22812	40
30	58454	47	71985	9	17056	55	54929	57	20997	30
40	62401	48	65187	9	06801	55	58386	58	17182	20
50	66349	47	58385	9	39796546	55	61843	58	14367	10
60	70296	47	51592	9	86291	55	65301	58	11552	030

Grad. 54.

S.M.

Grad. 35.

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M. S.	Sin.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sin.	D.	
30 0	58070.96	+6	54351594	96	33786191	54	20565301	58	81411552	16	60
10	74244	47	44796	96	76037	55	68759	58	08736	15	50
20	78184	47	38000	95	65782	54	72218	54	05921	15	40
30	82136	46	31205	94	55528	54	75677	53	03105	15	30
40	86082	47	24411	94	45275	54	79136	60	00289	15	20
50	90029	47	17617	93	35021	54	82596	61	81397473	17	10
31 0	93975	46	10844	92	24768	52	86056	61	94656	16	02
10	97921	45	04032	91	14515	51	89517	61	91840	16	50
20	58101867	45	54297240	91	04262	51	92978	61	89023	17	40
30	05813	+5	90449	90	33694010	52	96439	62	86206	30	
40	09758	+5	83659	90	83758	51	99901	62	83389	20	
50	13704	+5	76869	89	73507	51	20603362	61	80572	10	
32 0	17649	45	70080	88	63256	50	06824	62	77754	02	
10	21594	44	63222	87	53006	50	10286	63	74936	50	
20	25539	44	56505	87	42756	50	13749	63	72118	40	
30	29484	44	49718	86	32506	49	17212	64	69390	30	
40	33429	44	42932	85	22256	49	20676	64	66482	20	
50	37374	44	36147	85	12007	49	24140	65	63664	10	
33 0	41318	44	29362	84	01757	49	27605	65	60845	02	
10	45263	44	22578	83	33591508	48	31070	66	58026	50	
20	49207	44	15794	83	81259	48	34535	66	55207	40	
30	53152	43	09011	82	71011	48	38000	66	52388	30	
40	57095	43	02229	81	60763	47	41466	67	49508	20	
50	61039	43	54195442	80	50516	47	44932	67	46749	10	
34 0	64983	43	88668	79	40269	46	48399	67	43929	02	
10	68926	44	81885	78	30023	46	51866	68	41709	50	
20	72870	43	75110	78	19777	45	55333	68	38289	40	
30	76813	43	68332	77	05531	45	58801	68	35468	30	
40	80756	43	61554	77	33499286	45	62268	69	32648	20	
50	84699	42	54772	76	89041	44	65736	69	29827	10	
35 0	88643	42	48000	75	78795	44	69105	70	27006	02	
10	92585	42	41224	75	68550	44	72674	70	24185	50	
20	96528	42	34445	74	58306	43	76143	71	21363	40	
30	58200470	42	27675	73	48062	42	79613	71	18542	30	
40	04413	42	20907	73	37818	42	83083	71	15720	20	
50	08355	42	14128	72	27574	41	86554	71	12898	10	
60	12297	42	07356	71	17332	41	90024	70	10076	02	

Grad. 54.

S.M.

Grad. 35.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D	Logarith.	D.	Sinus.	D.
36 0	58212297		54107356		33417332		20690024		81310076	60
10	16239	41	00584	71	07089	43	93495	71	07254	22
20	20181		54093813	70	33396847	42	96966		04431	23
30	24122	41	87043	69	86605		10700438	71	01609	22
40	28064	42	80274		76364		03910		81298786	23
50	32005	41	73506		66125		07383	73	95963	10
37 0	35947	42	66738		55882		10856		93139	24
10	39888	41	59971	67	45641		14330	74	90316	23
20	43829	40	53104		35401	40	17803	73	87492	50
30	47770		46438	66	25161		21277	74	84668	40
40	51710	40	39673	65	14922	39	24751		81844	30
50	55651	41	32908		04682	40	28226	75	79020	20
38 0	59591	40	26144	64	33254443	39	31701		76196	10
10	63532	41	19381	63	84204		35177		73371	25
20	67472	40	12612	62	73966	38	38653		70546	50
30	71412		05857	61	63728		41129		67721	40
40	75352		53999054	60	53490	36	45606	77	64896	30
50	79292		92336		43254	37	49082	76	62071	20
39 0	83233	39	85576	59	33017	36	52559	77	59245	10
10	87171	40	78827	58	22731		56036		56420	25
20	91110	39	72059		12545		59514	78	53594	50
30	95049		65362	57	02309		62992		50768	40
40	98988		58544	56	33192075	35	66471	79	47941	30
50	58302927		51788		81838		69950		45115	20
40 0	06866		45032	55	71603		73429		42288	10
10	10805		38277	54	61368		76709	80	39461	25
20	14743	38	31523		51134	34	80389		36634	50
30	18682	39	24770	53	40900		83870	81	33807	40
40	22620	38	18011	52	30667	33	87250	80	30979	30
50	26558		11265		20434		90831	81	28152	20
41 0	30496		04512	51	10201		94312		25324	10
10	34434		53897763	50	33099968	32	97794	82	22496	25
20	38372		91012		89736	31	20801276		19668	50
30	42309	37	84263	49	79505		04758		16839	40
40	46247	38	77514		69273	32	08241	83	14010	30
50	50184	37	70766	48	59042	31	11724		11182	20
60	54121		64019	47	48811		15208	84	08353	10

Grad. 54.

S.M.

Grad. 35.

M. S.	Sinus.	D.	Logarith.	D.	Difference.	D.	Logarith.	D.	Sinus.	D.
42 0	58364121	3937	53864019	6746	33048811	30	20815208	84	81208353	60
10	58058		57273		38581	31	18692	85	05524	19
20	61995		50527	45	28350	29	22177	84	02694	30
30	65932	36	43782		18121	30	25661	85	81199265	29
40	69868	37	37037	44	07891	10129	29146		97035	10
50	73805	36	30293	43	32997662	28	32631	3486	94205	10
43 0	77741		23550	42	87433	17	36117	87	91375	0
10	81677		16807	41	77204	25	39603	88	88544	31
20	85613		10065	39	66976	24	43089	89	85714	40
30	89549	35	03324	38	56748	23	46576	90	82883	30
40	93485	36	96584	37	46521	22	50063	91	80052	20
50	97421	35	80845	36	36294	21	53551	92	77221	10
44 0	58401356	36	83106	35	26067	20	57039	93	74390	0
10	05292	35	76368	34	15840	19	60528	94	71558	31
20	09227	35	53769631	33	05615	18	64016	95	68727	40
30	13162		62894	32	32895389	17	67505	96	65895	30
40	17097		56358	31	85164	16	70994	97	63063	20
50	21032		49423	30	74940	15	74483	98	60231	10
45 0	24967	34	42688	29	64715	14	77973	99	57398	0
10	28901	35	35954	28	54491	13	81463	0	54566	31
20	32836	34	29221	27	44267	12	84954	01	51733	40
30	36770		22488	26	34043	11	88445	02	48900	30
40	40704		15756	25	23820	10	91936	03	46067	20
50	44638		09025	24	13597	9	95428	04	43233	10
46 0	48572	33	02294	23	03374	8	98920	05	40400	0
10	52506	33	53695564	22	32793151	7	20902413	06	37566	31
20	56430	34	88835	21	82929	6	05906	07	34732	40
30	60373	33	82107	20	72708	5	09399	08	31898	30
40	64306		75379	19	62486	4	12893	09	29063	20
50	68239		68652	18	52266	3	16386	10	26229	10
47 0	72172	71	61925	26	42045	2	19880	11	23394	0
10	76105		55195	25	31825	1	23374	12	20559	31
20	80038		48474	24	21605	0	26869	13	17724	40
30	83970	33	41750	23	11386	19	30364	14	14889	30
40	87903	32	35026	22	01166	18	33860	15	12053	20
50	91835	33	28303	21	32690947	17	37356	16	09218	10
60	95768	33	21580	20	80727	16	40853	17	06382	0

Grad. 54.

S. A.

Grad. 35.

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M. S.	Sinns.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinns.	D.
48	58495768	31	53621580	21	32680727	19	20940853	197	81106382	60
10	99700	31	14858	21	70508	18	44350	98	03546	36
20	58503632	31	08137	10	60290	18	47847	99	00710	40
30	07563	31	01417	10	50073	17	51344	98	81097873	37
40	11495	31	53594697	610	39855	18	54842	99	95037	36
50	15427	31	87978	18	29638	17	58340	99	92200	20
49	19358	31	81259	18	19420	17	61839	99	87363	10
10	23289	31	74541	17	09203	17	65338	99	86526	30
20	27220	31	67824	16	32598987	16	68837	99	83688	40
30	31151	31	61108	15	88771	15	72337	99	80854	30
40	35082	31	54392	14	78555	14	75837	99	78013	38
50	39013	31	47677	13	68340	13	79337	99	75175	10
50	42943	31	40963	12	58125	12	82838	99	72337	0
10	46874	31	34250	11	47911	11	86339	99	69498	39
20	50804	31	27537	10	37697	10	89840	99	66660	40
30	54734	31	20825	9	27483	9	93342	99	63821	39
40	58664	31	14113	8	17269	8	96844	99	60982	20
50	62594	31	07402	7	07055	7	1000347	99	58143	10
51	66524	29	00692	6	32496842	6	03850	99	55304	0
10	70453	29	53493983	5	86629	5	07354	99	52464	50
20	74383	29	87274	4	76417	4	10857	99	49625	39
30	78312	29	80566	3	66205	3	14361	99	46785	40
40	82241	29	73859	2	55994	2	17865	99	43945	30
50	86170	29	67152	1	45782	1	21370	99	41105	20
52	90099	28	60446	0	35571	0	24875	99	38264	10
10	94028	28	53741	0	25360	0	28381	99	35423	0
20	97957	28	47036	0	15149	0	31887	99	32583	50
30	58601885	28	40332	0	04939	0	35393	99	29741	40
40	05814	28	33629	0	32394729	0	38902	99	26900	30
50	09742	28	26926	0	84520	0	42406	99	24059	20
53	13670	27	20224	0	74311	0	45913	99	21213	10
10	17598	27	13523	0	64102	0	49421	99	18376	0
20	21525	27	06823	0	53894	0	52929	99	15534	50
30	25453	27	00123	0	43686	0	56437	99	12692	40
40	29381	27	53393424	0	33478	0	59946	99	09849	30
50	33308	27	36725	0	22271	0	63454	99	07007	20
60	37236	27	80027	0	13064	0	66963	99	04164	10

Grad. 54.

15. 11.

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Grad. 35.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54°	58637236	3927	53380527	97	32313064	1006	21066963	09	81004164	60
10	41163		73330	97	01858		70472		01321	50
20	45090		66634	99	32292652	06	73982		80998478	40
30	49017	26	59938	95	82446	05	77492	11	95635	30
40	52943	27	53243	94	72240	05	81003		92791	20
50	56870	26	46549	91	62035	06	84514	12	89948	10
55°	60796	27	39855	93	51829	05	88026		87104	0
10	64723	26	33162	92	41624	04	91538		84260	50
20	68649	25	26470	91	31420	03	95050		81415	40
30	72575		19779	90	21217	03	98562	13	78571	30
40	76501	25	13088	89	11013	04	21102075		75726	20
50	80426	26	06398	88	00810	04	05588	14	72882	10
56°	84352	25	53299708	87	32190606	03	09102		70037	0
10	88278		93019	88	80403	01	12616	15	67191	50
20	92203		86331	87	70200	01	16131	14	64340	40
30	96128		79644		59999	02	19645	15	61500	30
40	58700053		72957	86	49797	01	23160		58655	20
50	03978		66271		39596	02	26675	16	55805	10
57°	07903	24	59585	85	29394	01	30191		52963	0
10	11829	25	52900	84	19193	01	33707		50116	50
20	15752		46216	83	08993	00	37223	17	47270	40
30	19677	24	39533		32098793		40740		44423	30
40	23601		32850	82	88593		44257	18	41576	20
50	27525		26168		78393		47775		38729	10
58°	31449	23	19486	81	68193	1098	51293	19	35882	0
10	35372	24	12805	80	57993		54812	18	33034	50
20	39296		06125	79	47795		58330	19	30187	40
30	43220	23	53199446		37597		61849		27335	30
40	47143		92767	78	27395		65368	20	24491	20
50	51066		86089		17201		68888		21642	10
59°	54989		79411	77	07003		72406	21	18794	0
10	58912		72734	76	31996805		75929		15945	50
20	62835		66058	75	86608	97	79450		13097	40
30	66758		59383		76412	96	82971	22	10248	30
40	70681		52708	74	66215	97	86493	21	07398	20
50	74603	22	46034	73	56020	95	90014	23	04549	10
60	78525		39361		45825		93536		01699	0

Grad. 54.

S.A.

Grad. 36.

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M. S.	Sinns.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinns.	D.
0	58778525	3922	53139361	6672	31945825	94	11193536	22	80901699	60
10	82447		32889		35631	95	97058	23	80898850	49
20	86369		26017		25436	96	11200581	24	96000	40
30	90291		19346		15242	97	04104	25	93150	30
40	94213		12675		05047	98	07628	26	90299	20
50	98135		06005		31894853	99	11152	27	87449	10
I 0	58801056	21	53099336	68	84660	94	14676	28	84598	059
10	05977	22	92668		74467	95	18201	29	81747	50
20	09899	21	86000		64273	96	21727	30	78896	40
30	13820		79333		54081	97	25252	31	76045	30
40	17741		72667		43889	98	28776	32	73193	20
50	21661		66001		33697	99	32304	33	70342	10
2 0	25582	20	59336	64	23506	94	35830	34	67490	058
10	29502	21	52672		13315	95	39357	35	64638	50
20	33423	20	46008	63	03123	96	42883	36	61786	40
30	37343		39345	62	31794933	97	46412	37	58933	30
40	41163		32685		82743	98	49940	38	56080	20
50	45183		26021		72553	99	53468	39	53228	10
3 0	49103	19	19360	61	62363	89	56997	40	50375	057
10	53023		12700		52174	90	60526	41	47522	50
20	56942		06040		41985	91	64055	42	44668	40
30	60861	20	52999381	59	31796	88	67585	43	41815	30
40	64781	19	92723		21608	89	71115	44	38961	20
50	68700		86065		11419	90	74646	45	36107	10
4 0	72619	18	79408	57	01231	88	78177	46	33253	056
10	76538		72752		31691043	86	81709	47	30398	50
20	80456		66097		80857	87	85240	48	27544	40
30	84375	19	59442	54	70670	86	88772	49	24689	30
40	88293		52788		60484	85	92304	50	21834	20
50	92212		46134		50298	84	95836	51	18979	10
5 0	96150	18	39481	53	40112	85	99369	52	16114	055
10	58900048		32829		29927	84	11302902	53	13269	50
20	03966		26178		19742	83	06436	54	10413	40
30	07883	17	19527	50	09557	84	09970	55	07557	30
40	11801		12877		31599373	85	13504	56	04701	20
50	15718	18	06227	49	89188	84	17039	57	01845	10
60	19636		52899578		79004		20574		80798988	054

Grad. 53.

S.M.

Grad. 36.

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M. S.	Logarithm.	D.	Different.	D.	Logarithm.	D.	Sinus.	D.	Sinus.	D.
6. 0	58919636	3017	52899578	48	31579004	84	21320574	3536	80798988	56
10	23553		92930	48	68820		24110		96132	50
20	27470		86283	47	58637	10183	27646		93275	40
30	31387		79636	46	48454	83	31182	37	90418	30
40	35304	16	72990	45	38271	81	34719	36	87561	20
50	39220	17	66345	44	28090	81	38255	37	84703	10
7 0	43137	16	59700	44	17908	81	41792		81846	58
10	47053		53056	43	07727		45329	38	78988	50
20	50969		46413	43	31497546		48867		76130	40
30	54885		39770	42	87365		52405	39	73272	30
40	58801		33128	41	77184	80	55944		70414	20
50	62717		26487	41	67004	81	59483	40	67555	10
8 0	66633	15	19846	40	56823	80	63023	41	64697	58
10	70548	16	13206	39	46643		66563		61838	50
20	74464	15	06567	38	36463	79	70104	40	58975	40
30	78379		52799928	37	26284		73644	41	56119	30
40	82294		93290	37	16105	78	77185		53260	20
50	86209		86653	36	05927		80726	42	50400	10
9 0	90124	14	80016	35	31395749		84267		47541	58
10	94038	15	73380	35	85571	77	87800	43	44681	50
20	97953	14	66745	34	75394	78	91351	44	41820	40
30	59001867	15	60110	33	65216	77	94894	45	38960	30
40	05782	14	53476	33	55039		98437	46	36099	20
50	09696	13	46843	32	44862		21401981	47	33239	10
10 0	13610	13	40210	31	34685		05525	48	30378	58
10	17524	13	33578	31	24508	75	09070	49	27516	50
20	21437	13	26947	30	14333	76	12614	50	24655	40
30	25351	14	20316	29	04157	75	16155	51	21794	30
40	29264	13	13686	29	31295982		19704	52	18932	20
50	33178	13	07057	28	83807		23250	53	16070	10
11 0	37091	12	00428	27	73632		26796	54	13208	58
10	41004	12	52693800	26	63457	73	30343	55	10346	50
20	44917	12	87173	25	53284		33899	56	07483	40
30	48829	13	80547	24	43111		37436	57	04621	30
40	52742	13	73921	23	32938		40983	58	01758	20
50	56654	13	67296	22	22765	72	44531	59	80698894	10
60	60567	13	60672	21	12593		48079	60	96031	0

Grad. 53.

S.M.

Grad. 36.

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M. S.	Sin.	D.	Different.	D.	Different.	D.	Logarith.	D.	Sin.	D.
12 0	59060567		52660672		31212593		11448079		80696031	60
10	64479	3912	54049	6013	02421	72	51628	3549	93168	50
20	68391		47426	12	31192249	71	55177	50	90304	40
30	72303		40804	11	82078	70	58726	50	87440	30
40	76215	11	34182	20	71906	72	62276	49	84576	20
50	80126	12	27561	19	61736	70	65825	50	81712	10
13 0	84038	11	20941	18	51566	10169	69375	51	78848	65 0 47
10	87949		14322	17	41397		72925	52	75983	50
20	91860		07704	16	31228		76476	53	73118	40
30	95771		01086	15	21059		80027	54	70253	30
40	99682		52594469	14	10890		83579	55	67388	20
50	59103593		87852	13	00721		87131	56	64523	10
14 0	07504	10	81236	12	31090552		90684	57	61658	66 0 46
10	11414	11	74620	11	80383		94237	58	58791	50
20	15325	10	68005	10	70214		97791	59	55926	40
30	19235		61391	9	60047		11501344	60	53060	30
40	23145		54776	8	49878		04898	61	50194	20
50	27055		48162	7	39710		08452	62	47327	10
15 0	30965		41548	6	29542		12006	63	44460	66 0 45
10	34875		34935	5	19374		15561	64	41594	50
20	38784		28324	4	09207		19117	65	38717	40
30	42694		21713	3	30999040		22673	66	35859	30
40	46603		15103	2	88874		26229	67	32992	20
50	50512		08494	1	78708		29786	68	30124	10
16 0	54421		01886	0	68544		33342	69	27257	67 0 44
10	58330		52495278	0	58379		36899	70	24389	50
20	62238		88671	0	48214		40457	71	21520	40
30	66147		82065	0	38050		44015	72	18652	30
40	70055		75459	0	27886		47573	73	15783	20
50	73964		68854	0	17722		51132	74	12915	10
17 0	77872		62250	0	07559		54691	75	10046	69 0 43
10	81780		55647	0	30897396		58251	76	07177	50
20	85688		49044	0	87234		61810	77	04307	40
30	89596		42442	0	77072		65370	78	01438	30
40	93503		35840	0	66910		68930	79	80598568	20
50	97411		29239	0	56748		72491	80	95698	10
60	59201318		22639	0	46587		76052		92828	0 42

Grad. 53.

S.M.

Grad. 36.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	59201318	3907	51422639	99	30846587	61	21576052	362	80592828	70
10	05225		16040		36426		79614		89558	50
20	09132		09441		16265		83176		87088	40
30	13039		02843	98	16105	60	86738		84217	30
40	16946		51396246	97	05945		90301	63	81346	20
50	20852	07	89649	96	30795786		93863	62	78475	10
19 0	24759	06	85053		85627	1059	97426	63	75604	0
10	28665		76458	95	75468		11600990	64	72732	50
20	32571		69864		65309		04555	65	69861	40
30	36477		63270	94	55151	58	08119	64	66939	30
40	40383		56676		44992	59	11684	65	64117	20
50	44289		50083	93	34834	58	15249	65	61245	10
20 0	48195	05	43490		24676		18814	66	58373	0
10	52100	06	36898	92	14518		22380		55500	50
20	56006	05	30307	91	04361	57	25946		52627	40
30	59911		23717	90	30694104		29513	67	49754	30
40	63816		17127		84047		33080		46881	20
50	67721		10538	89	73891	56	36647		44008	10
21 0	71626		03950	88	63736	55	40214		41135	0
10	75531	04	51297363	87	53581		43782	68	38261	50
20	79435		90777	86	43427	54	47350		35387	40
30	83339	05	84190	85	33271	56	50919	66	32513	30
40	87244		77604	86	23116	55	54488		29639	20
50	91140	04	71018	85	12960	56	58058	70	26764	10
22 0	95052	03	64433		02805	55	61618		23890	0
10	98956	04	57849	84	30592650		65199	71	20015	50
20	59302859	03	51266	83	81497	53	68769	70	18140	40
30	06763		44684	82	72344		72340	71	15265	30
40	10666		38102		62191		75911		12339	20
50	14570	04	31521	81	52038	51	79483	72	09514	10
23 0	18473	03	24941		41837	52	83054	71	06638	0
10	22376		18361		31735		86626	72	03762	50
20	26279	01	11782	79	21583		90199	73	00886	40
30	30181	03	05203		11431		93772	74	80498009	30
40	34084		52198625	76	01279		97346		95143	20
50	37986	02	72049	75	30491129	50	21700920		92257	10
60	41889	03	85474		80980	49	04494		89380	0

Grad. 53.

S.M.

Grad. 36.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
24	59341889	3901	52185474	76	30480980	51	11704494	80	80489380	60
10	45791		78898	76	70822	51	03069	80	86503	77
20	49693		72323	76	60679	51	11644	80	83625	78
30	53595		65748	74	50529	51	15219	76	80748	77
40	57496	01	59174	74	40379	51	18795	76	77870	77
50	61398	02	52602	72	30232	47	22370	75	74992	77
25	65300	01	46031	71	20085	49	25946	76	72114	77
10	69201	01	39459	72	09936	49	29523	77	69236	77
20	73102		32888	71	30399787	47	33101	78	66356	78
30	77003		26318	70	89640	47	36678	77	63479	79
40	80904		19749	69	79493	47	40256	78	60601	78
50	84805	00	13180	68	69346	46	43834	77	57722	79
26	88705	01	06612	67	59200	46	47412	79	54842	80
10	92606	00	00045	67	49054		50991	80	51963	79
20	96506		52093478	66	38908		54570	80	49084	80
30	99400400	01	86912	65	28762	45	58150	81	46204	80
40	04307	0	80346	65	18616	45	61730	81	43324	80
50	08200		73781	64	08471	45	65310	81	40444	80
27	12107	5890	67217	63	30298326	44	68891	82	37564	81
10	16006		60654	63	88182	44	72472	82	34683	81
20	19905		54091	62	78038		76053	82	31802	81
30	23805		47529	61	67894		79635	83	28921	82
40	27704		40967	61	57750		83217	83	26047	82
50	31603		34406	60	47606	43	86800	84	23159	83
28	35502		27846	59	37463	42	90383	84	20278	82
10	39401		21287	58	27320	42	93967	84	17396	83
20	43300		14728	57	17178	41	97550	84	14514	83
30	47198	98	08170	56	07036	41	101134	85	11632	83
40	51097	99	01613	55	30196895	41	04715	85	08750	82
50	54995	98	51995056	56	86753	42	08303	85	05868	83
29	58893		88500	55	76612	41	11888	86	02985	83
10	62791		81945	54	66472	40	15473	86	00103	82
20	66685		75390	54	56331	41	19059	87	80397220	83
30	70586	97	68836	53	46191	40	22645	87	94337	84
40	74484	98	62282	52	36050	40	26232	87	91453	84
50	78381	97	55729	52	25910	40	29819	87	88570	83
60	82279	98	49177	52	15771	39	33406	87	85686	84

Grad. 33.

S.M.

Grad. 36.

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M. S.	Sinus.	D.	Logarithm.	D.	Different.	D.	Logarithm.	D.	Sinus.	D.
30 0	59482279	307	51949177	1559	30115771	10139	21833406	88	80385686	200
10	86176		41626		05632		36994		82802	
20	90073		36075		30095493		49582		79918	
30	93970	96	29525	50	85354	38	44171	89	77034	85
40	97866	97	22975	49	75216	37	47759	88	74149	84
50	99501763	96	16426	48	65078	36	51348	89	71265	85
31 0	05659	97	09878	47	54941	35	54937	90	68380	86
10	09556	96	03331	46	44804	34	58527	91	65495	85
20	13452		51896784	45	34667	33	62117	92	62610	84
30	17348	95	90238	44	24531	32	65707	93	59724	83
40	21244	96	83692	43	14394	31	69298	94	56839	82
50	25140	95	77147	42	04258	30	72889	95	53953	81
32 0	29035	96	70603	41	29994122	29	76481	96	51067	80
10	32931	95	64060	40	83986	28	80074	97	48181	79
20	36826		57517	39	73851	27	83666	98	45295	78
30	40721		50975	38	63716	26	87259	99	42408	77
40	44616		44433	37	53581	25	90852		39521	
50	48511		37892	36	43447	24	94445		36634	
33 0	52406		31351	35	33312	23	98039		33747	
10	56301	94	24811	34	23178	22	11901633		30860	
20	60195		18272	33	13044	21	05228		27973	
30	64089		11734	32	02911	20	08823		25085	
40	67983		05196	31	29892778	19	12418		22197	
50	71877		51798655	30	82645	18	16014		19309	
34 0	75771		92122	29	72512	17	19610		16421	
10	79666		85586	28	62379	16	23207		13531	
20	83555	93	79051	27	52247	15	26804		10644	
30	87452	94	72517	26	42116	14	30401		07755	
40	91346	93	65985	25	31984	13	33999		04866	
50	95239		59450	24	21854	12	37596		01977	
35 0	99132		52917	23	11723	11	41194		80299088	
10	99603025		46385	22	01593	10	44792		96198	
20	06918		39854	21	29791463	9	48391		93308	
30	10810	92	33324	20	51334	8	51990		90418	
40	14703	93	26794	19	71204	7	55590		87528	
50	18595	92	20265	18	61075	6	59190		84638	
60	22487		13737	17	50947	5	62790		81748	

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Grad. 36.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
36°	59622487	93	51713737	27	29750947	1012	11962790	01	80281748	60
10	26370	92	07210	27	40819	1012	66391	01	78857	50
20	30272	91	09683	25	30691	1012	69991	02	75966	40
30	34163	92	51694157	25	20563	27	73594	01	73075	30
40	38055	91	87631	25	10436	27	77195	01	70184	20
50	41946	92	81106	25	00309	27	80797	02	67293	10
37°	45838	91	74581	24	29690182	16	84399	03	64401	0 23
10	49729	90	68057	23	80055	16	88001	03	61509	50
20	53620	90	61534	22	69929	16	91605	04	58617	40
30	57511	90	55012	21	59803	25	95209	05	55725	30
40	61402	90	48490	21	49677	25	98813	05	52832	20
50	65293	90	41969	20	36552	25	12002417	05	49940	10
38°	69183	91	35449	19	29427	24	06022	06	47047	0 22
10	73074	90	28930	19	19303	24	09627	06	44154	50
20	76964	90	22411	18	09279	24	13232	06	41261	40
30	80854	89	15893	17	29599055	16	16838	07	38368	30
40	84744	89	09375	17	88931	16	20444	07	35474	20
50	88634	89	02858	16	78807	16	24051	07	32580	10
39°	92524	89	51596341	16	68683	33	27658	08	29686	0 21
10	96413	90	89825	15	58559	33	31266	07	26792	50
20	99700303	89	83310	14	48437	33	34873	08	23898	40
30	04192	89	76796	13	38315	21	38481	09	21004	30
40	08081	88	70282	12	28193	21	42089	10	18109	20
50	11970	88	63769	11	18071	21	45698	10	15214	10
40°	15859	88	57257	11	07950	22	49307	11	12319	0 20
10	19748	88	50745	11	29497828	31	52917	11	09424	50
20	23636	89	44234	10	87707	31	56527	11	06529	40
30	27525	88	37724	09	77586	20	61338	12	03633	30
40	31413	87	31214	08	67466	19	63748	12	00737	20
50	35301	87	24705	07	57346	19	67359	13	80197841	10
41°	39189	87	18196	06	47226	18	70970	14	94945	0 19
10	43077	87	11688	06	37106	18	74582	14	92049	50
20	46965	87	05181	05	26987	18	78194	14	89152	40
30	50853	87	51498674	05	16868	18	81806	14	86256	30
40	54740	87	92168	05	06749	18	85419	14	83359	20
50	58628	87	85663	05	29396631	19	89032	14	80462	10
60	62515	87	79158	05	86512	19	92646	14	77564	0 18

Grad. 53.

S. M.

A22

Grad. 36.

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M. S.	Sinus.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus.	D.
42 0	59762515	87	51479158	04	19386511	18	21092646	14	80177564	97
10	66403		72654		76394		96260	15	74667	1898
20	70289		66151		66276		99875	16	71769	
30	74175	86	59648		56159	17	21103489	14	68871	
40	78062	87	53146	02	46042		07104	15	65973	
50	81949		46645	01	35926	16	10719	16	63075	
43 0	85835	88	40144	0	25809	17	14335		60177	99
10	89721		33644		15693	16	17951		57278	
20	93607		27145		05577		21568	1617	54379	
30	97493		20646		29295461	15	25185	17	51420	
40	59801379	85	14148	98	85346		28802	18	48581	
50	05264	86	07651	97	75231		32420	19	45682	
44 0	09150	85	01154		65117	10114	36037	17	42782	1900
10	13035	86	55394658	86	55003		39655	18	39883	
20	16921	86	88163	95	44889		43274	19	36983	
30	20806	85	81668		34775		46893	20	34083	
40	24691	84	75174	94	24661		50533	21	31182	
50	28575	85	68680	93	14548	13	54137	22	28282	
45 0	32460		62187	92	04435	12	57752	23	25381	
10	36345	84	55695	91	29194323		61372	24	22480	
20	40229		49204		84211		64993	25	19577	
30	44112		42713	90	74095		68614	26	16678	
40	47997		36212		63987		72236	27	13775	
50	51881		29733	89	53875	11	75856	28	10875	
46 0	55765		23244	88	43764		79480	29	07973	
10	59649	83	16756	87	33653	10	83103	30	05071	
20	63532	84	10269		23543	11	86726	31	02166	
30	67416	83	03782	86	13432	09	90350	32	009267	
40	71299		51297196		03323	10	93973	33	96364	
50	75182		90810	85	19093213	09	97597	34	93461	
47 0	79065		84325	84	83104		21201241	35	90554	
10	82948		77841		71995	08	04846	36	87656	
20	86831	82	71358	83	62887		08471	37	84751	
30	90713		64875	82	52779		12096	38	81849	
40	94595	83	58393		41671		15722	39	78945	
50	98478	82	51911	81	32563		19348	40	76041	
60	59902360		45430		22455		22975	41	73137	

Grad. 53.

S.M.

Grad. 36.

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M. S.	Sinus.	D.	Logarith. D.	Different.	D.	Logarith. D.	Sinus.	D.
48 °	59903360	81	51245430	29022455	07	12222975	80073137	60
10	06142		38950	12348	08	16602	70133	50
20	10124		32490	02140	09	30130	67328	40
30	14005	81	25991	28992133	07		64424	30
40	17887	81	19513	81027	06	33858	61519	20
50	21768	81	13035	71920	07	37486	58614	10
49 °	25650	82	06558	61815	05	41115		
10	29531		00082	51710	05	44743	55709	09
20	33412		51193606	41604	06	48372	51803	05
30	37193	80	87131	31499	10105	52002	49898	06
40	41173	80	80656	21394	10105	55632	46992	30
50	45054	81	74182	11289	04	59262	44086	20
50 °	48934	80	67709	01185	03	62893	41180	10
10	52815	81	61237	28891082	05	66524	38174	07
20	56695	80	54765	80978	04	70155	35367	06
30	60575		48294	70875	03	73787	32461	07
40	64455		41814	60772	01	77419	29554	30
50	68334	79	35354	50669	01	81052	26647	20
51 °	72214	80	28885	40567	01	84685	23739	08
10	76093	79	22417	30465	01	88318	20832	07
20	79973	80	15949	20363	01	91952	17914	06
30	83852	79	09482	10262	01	95586	15016	05
40	87731		03015	00160	02	99220	12108	30
50	91610		51096549	28790059	01	102855	09200	20
52 °	95489	78	90084	79958	01	06490	06192	09
10	99367	78	83620	69858	00	10126	03383	08
20	60003246	79	77156	59757	01	13762	00475	07
30	07124	78	70693	49658	01	17399	79997566	06
40	11001		64230	39558	10099	21035	94657	10
50	14880		57768	29459	62	24671	91747	20
53 °	18758		51306	19359	99	28309	88838	09
10	22636	77	44845	09260	98	31947	85928	19
20	26513	77	38385	28699162	98	35585	83018	08
30	30391	78	31926	89064	59	39223	80108	07
40	34268	77	25467	78966		42862	77198	30
50	38145	78	19009	68868		46501	74287	20
60	42023		12551	58770		50141	71377	10
						53781	68466	06

Grad. 53.

S. M.

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Grad. 36.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
54	60041023	77	51012551	57	28658770	98	22353781	41	79968466	11	60
10	45900	76	06094	57	48672	96	57422	40	65555	11	50
20	49776	77	50999638	57	38576	97	61062	41	62644	12	40
30	53653	76	93182	54	28479	96	64703	41	59732	11	30
40	57529	77	86727	55	12383	97	68344	42	56821	12	20
50	61406	77	80272	54	08286	96	71986	42	53909	12	10
55	65282	76	73818	53	28598190	96	75628	43	50997	13	0
10	69158	75	67365	53	88094	10095	79271	42	48085	13	50
20	73034	75	60912	52	77999	94	82913	43	45172	12	40
30	76910	75	54460	51	67904	94	86556	43	42260	13	30
40	80785	75	48009	51	57809	94	90200	44	39347	13	20
50	84661	75	41558	50	47714	94	93844	44	36434	13	10
56	88536	74	35108	49	37620	93	97488	45	33521	14	0
10	92411	74	28659	48	27528	93	12401133	45	30608	14	50
20	96286	74	22210	48	17432	93	04778	46	27695	14	40
30	60100161	74	15762	47	07339	94	08423	46	24781	15	30
40	04036	74	09314	47	28497145	93	12069	47	21867	15	20
50	07911	74	02867	46	87152	93	15715	47	18953	15	10
57	11785	73	50896421	45	77059	91	19362	48	16039	16	0
10	15660	74	89975	44	66966	91	23005	48	13124	16	50
20	19534	73	83530	44	56873	91	26657	47	10210	15	40
30	23408	73	77086	43	46782	91	30304	48	07290	17	30
40	27281	73	70642	43	36690	91	33952	48	04381	17	20
50	31156	73	64105	42	26595	91	37600	49	01465	17	10
58	35029	74	57757	41	16508	89	41249	50	79898550	18	0
10	38903	73	51315	40	06417	89	44898	50	95634	18	50
20	42776	74	44874	40	28396326	89	48548	51	92718	18	40
30	46650	73	38434	39	86256	89	52195	51	89802	19	30
40	50523	72	31995	38	76147	89	55848	52	86886	19	20
50	54396	72	25556	37	66057	89	59495	52	83970	19	10
59	58268	71	19118	36	55968	88	63150	53	81054	20	0
10	62141	72	12681	37	45879	88	66804	53	78137	20	50
20	66014	72	06244	36	35790	88	70454	53	75220	20	40
30	69886	71	50799808	35	25702	87	74106	54	72303	21	30
40	73758	71	93173	35	15614	87	77759	54	69386	21	20
50	77630	71	86938	34	05527	87	81411	53	66469	21	10
60	81502	70	80504	34	28295440	86	85064	53	63551	22	0

Grad. 53.

S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
0	0	60181502	72	50780504	33	28295440	86	22485064	53	79863551	60
10	85374			74071		85354		88717		60633	50
20	89246			69639		75268		92371		57715	40
30	93117			61207		65182	85	96025	54	54797	30
40	96989			54776	31	55097	86	99679		51879	20
50	60200860	3871		48345	30	45011	85	12503334	55	48960	10
1	0	04731		41915	19	34926		06989	56	46042	19
10	08602			35486	28	24841	84	10645		43123	50
20	11473			29058		14757	85	14301		40604	40
30	16344	70		12630	27	04672	10083	17958	56	37284	30
40	20214			16203	26	18194589		21614		34365	20
50	24085	71		09777		84506		25271	57	31445	10
2	0	27955	70	03351	25	74423		28928	58	28215	0
10	31825			50696926	24	64340	82	32586		25605	50
20	35695			90961		54258	83	36244	59	22685	40
30	39565			84078	23	44175	82	39903		19765	30
40	43435	69		77655		34093		43562		16844	20
50	47304			71232	22	24011		47221	60	13923	10
3	0	51173	70	64810	21	13929	81	50881	61	11002	0
10	55043	69		58389		03848	81	54541		08081	50
20	58912			41968	20	18093766	81	58202		05160	40
30	62781			45548	19	83685	80	61863		02238	30
40	66650	68		39129		73605	81	65524	62	79799317	20
50	70518	69		32710	18	63524	80	69186		96395	10
4	0	74387	68	26292	17	53444		72848	63	93473	0
10	78255	69		19875		43364	79	76521	62	90550	50
20	82124	68		13458	16	33285		80173	63	87628	40
30	85992			07042	15	23206	80	83836	64	84705	30
40	89860			00626		13126	79	87500		81782	20
50	93728	67		50594221		03047		91164		78859	10
5	0	97595	68	27796	24	27992968		94838	65	75936	0
10	60301463	67		81382	13	82889	78	98493		73013	50
20	05330	66		74569		72811	79	22602158		70099	40
30	09198	67		68556	12	61732	77	05824	66	67165	30
40	13065			62144	11	52655		09489	65	64241	20
50	16932			55733		42578		13155	66	61317	10
6	0	20799		45323		32501		16821		58393	0

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S. M.

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Grad. 37.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
5 0	320799		50549322		27932501		22616821		77758393	
10	24666	67	42912	10	22424	77	10482	3667	55468	25
20	28532	66	36503	6409	12348	10076	14775		52544	24
30	32399	97	36094		01272		27822		49619	25
40	36265	3866	23686	08	2789196		31490	68	46694	26
50	40131	3866	17278	07	82110		35558	69	43768	25
7 0	43997		10871	06	72044	75	38827		40843	
10	47863		04465	05	61969	74	42496		37917	2926
20	51729		50498060		51895	75	46165	70	34991	24
30	55594	65	91655	04	41860	74	49835		32065	3
40	59460	66	82551		31746	75	53505	71	29139	2
50	63325	65	73847	03	21671	74	57176		26213	37
8 0	67190		71444	02	11597	73	60847	72	23286	
10	71055		66042		01523		64519	71	20359	5
20	74920		59640	01	27791450		68190	72	17432	4
30	78785	64	52235	00	81377	71	71862		14505	31
40	82649	65	46839		71305	73	75534	73	11578	24
50	86514	64	40435	6390	61232	72	79207		08650	28 10
9 0	90378		34040		51160	71	82880		05723	27
10	94242		27642	97	41089	72	86553	74	02795	28 50
20	98106		21244		31017	71	90227		79699867	29 40
30	101970		14847		20946	70	93902	75	96938	28 30
40	05834		08450	96	10874	71	97576		94010	29 20
50	09698	63	02054		00803		12705251		91082	29 10
10 0	13561		50395658	95	27690732		04916	76	88152	0
10	17424	64	89163	94	80661	70	08602		85223	50
20	21288	63	82869	93	70591	69	12278		82294	40
30	25151	62	76476		60522	70	15954	77	79365	30 30
40	29013	63	70083	92	50452	69	19631		76433	20
50	32876		63691	91	40383		23308	78	73505	10
11 0	36739	62	57300	90	30314		26986		70575	04
10	40601	63	50910		20246	68	30664	79	67645	50
20	44464	62	44520	89	10177	69	34343		64715	40
30	48326		38131		00110	67	38021	78	61785	30
40	52188		31742	88	27590042	68	41700	79	58854	20
50	56050	61	25354		79575	67	45379	80	55923	10
60	59911		18966		69907	68	49059		53992	04

Grad. 32.

S.M.

M.S.	Sinns.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinns.	D.
12	60439911	62	50318966	87	27569907	67	22749059	80	79651991	60
10	63773		12579		59840	66	52739		50061	31
20	67635		06193		49774	66	56419		47129	32
		360				67	60100	81	44137	31
30	71496		50399807		39707		63781		41266	32
40	75357		43412	84	29641		67463		38334	33
50	79218		87038		19575	10068	71145	3682	35401	31
							74827		32469	32
13	83079		80654	83	09509	65	78510	83	19536	31
10	86940	60	74271	82	27499444		82193		26604	32
20	90800	61	67889	81	89379		85877	84	23671	33
							89561		20738	34
30	94661	60	61507	81	79314	54	93145	85	17804	33
40	98521	60	55116		69249	63	96930		14871	30
50	60502381		48743	80	59184	64	1800615	86	11937	40
							04191	85	09003	30
14	06241		42365	79	49120	62	07986	86	06069	30
10	10101		35986	78	39056	63	11672		03135	31
20	13961		29608		28993	62	15358	87	00100	34
							19045		79597266	35
30	17821	59	23230	77	18929	61	22732	88	94331	30
40	21680	60	16853		08867	60	26420		91396	30
50	25540	59	10476	76	27398804	61	30108	89	88461	20
							33796		85525	36
15	29399		04100	75	88744	60	37485	90	82590	35
10	33258		50197725		78680	61	41174		79654	30
20	37117		91350	74	68618	61	44364		76718	40
							48554		73782	30
30	40976	58	84976		58556	60	52244	91	70845	37
40	44834	59	78602	73	48494	60	55933		67909	37
50	48693	58	72229	72	38433	60	59626	92	64972	30
							63318		62039	30
16	52551		65857	71	28372	59	67010	93	59098	40
10	56405		59486		18312	60	70703		56161	30
20	60267		53115	70	08251	60	74395	92	53224	20
							78088	93	50286	35
30	64125		46745		2798191		81781		47348	042
40	67983		40375	69	88131					
50	71841	57	34006		78071					
17	75695		27637	68	68011					
10	79555		21269	67	57951					
20	83413	58	14902		47891	59				
30	87270	57	08535	66	37832	60				
40	91127		02169	65	27774	58				
50	94983	56	50095804		17716					
		57	89439		07658					
60	98840									

Grad. 37.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	60598840	57	50089439	64	27207658	58	22881781	94	79547348	60
10	60602697	57	83075	64	27197600	58	85475	94	44410	50
20	06553	57	76712	64	87543	57	89169	94	41471	40
30	10409	57	70349	62	77485	58	92864	96	38534	30
40	14265	57	63987	62	67428	10057	96559	96	35595	20
50	18121	57	57625	61	57371	22900254	32656	96	32656	10
19 0	21977	55	51264	60	47314	56	03950	96	29717	0 41
10	25832	56	44904	59	37238	56	07646	97	26778	50
20	29688	55	38544	58	27202	56	11342	97	23839	40
30	33543	56	32185	58	17146	55	15039	97	20899	30
40	37399	55	25827	57	07091	55	18736	98	17960	20
50	41254	55	19469	57	17097035	56	22434	98	15020	10
20 0	45109	54	13112	56	86980	55	26132	99	12080	0 40
10	48963	55	06756	54	76925	54	29831	99	09139	50
20	52818	54	00400	53	66871	54	33529	99	06199	40
30	56672	55	49994045	54	56817	53	37228	99	03258	30
40	60527	54	87691	53	46764	54	40927	99	00318	20
50	64381	54	81337	53	36710	54	44627	99	79497377	10
11 0	68235	53	74984	52	26657	53	48327	01	94435	0 39
10	72089	53	68632	51	16605	51	52027	01	91494	50
20	75943	53	62281	50	06554	51	55727	01	88552	40
30	79796	54	55931	49	26996503	50	59428	01	85611	30
40	83650	53	49581	48	86452	50	63129	01	82669	20
50	87503	54	43232	47	76401	50	66831	01	79727	10
22 0	91357	53	36884	46	66351	51	70533	03	76784	0 38
10	95210	52	30536	45	56300	51	74236	03	73842	50
20	99063	51	24189	44	46251	49	77938	03	70899	40
30	60702915	53	17842	43	36201	50	81641	03	67956	30
40	06768	52	11496	42	26151	49	85344	03	65013	20
50	10620	53	05150	41	16203	50	89047	04	62070	10
23 0	14473	52	49898805	40	06054	48	92751	04	59127	0 37
10	18325	51	92461	39	26896006	47	96455	04	56183	50
20	22177	51	86118	38	85959	47	13000159	05	53239	40
30	26029	51	79775	37	75911	48	03864	05	50295	30
40	29881	51	73433	36	65864	47	07569	05	47351	20
50	33732	51	67091	35	55817	47	11274	06	44407	10
60	37584	51	60750	34	45770	47	14980	06	41462	0 36

Grad. 52.

S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
24 0	60737584		49860750		16845770		13014580		79441462		60
10	41435	51	54410	40	35724	+6	18686	56	38517	245	50
20	45287	52	48070	39	25677	47	22393	57	35572	40	
30	49138	51	41731	6116	15631	1000	26100	500	32627	30	
40	52989	50	35393		05585	+0	29808		29682	20	
50	56839	51	29055		26795539	+5	33516		26737	10	
25 0	60690	50	22718		85494	+6	37224	09	23791	46	35
10	64540	51	16381	36	75448	+5	40935		20845	30	
20	68391	51	10045		65403	+5	44641		17899	20	
30	72241	385	03709	34	55357	+6	48352	10	14953	10	
40	76091	0	49797374	35	45311	+5	52061		12006	40	
50	79941		91039	34	35266	+6	55773	11	09060	47	
26 0	83791		84705	33	25221	+5	59484		06113	34	
10	87641	49	78372		15177	+4	63195		03166	20	
20	91490	49	72039	32	05132	+5	66908	12	00219	10	
30	95339	50	65707	31	26695088	+4	70615		79397271	48	
40	99189	49	59376		85045	+3	74331		94324	47	
50	60803038		53045	30	75001	+4	78044	13	91376	48	
27 0	06887	48	46715	29	64958	+3	81757		88458	33	
10	10735	49	40386		54915	+4	85471	14	85480	20	
20	14584	48	34057	28	44872	+1	89185		82532	10	
30	18433	48	27729	27	34830	+3	92899	15	79583	48	
40	22281	49	21401	26	24787	+4	96614		76635	40	
50	26129	26	15074	25	14746	+1	23100328	14	73686	30	
28 0	29977	25	08748	24	04705	+2	04043	15	70737	20	
10	33825	25	01423	23	26594664	+1	07755	16	67788	10	
20	37673	49696098		22	84622	+2	11471	16	64838	40	
30	41521	47	89774	21	74582	+1	15192	17	61889	30	
40	45368	48	83450	20	64541	+0	18909		58939	20	
50	49215	47	77127	19	54501	+0	22626		55989	10	
29 0	53063	46	70804	18	44461		26343	18	53039	30	
10	56910	47	64482	17	34421		30061		50088	20	
20	60757	46	58161	16	24382	39	33779	19	47138	10	
30	64603	47	51841	15	14343		37498		44187	40	
40	68450	46	45521	14	04304		41217		41236	30	
50	72297	46	39202	13	26494265	32	44937	20	38285	20	
60	76143		32884	12	84217		48657		35334	10	

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D	Logarith.	D.	Sinus.	D.
30 0	60876143	2	49632884	18	26484227	39	13148657	3721	79335334	51
10	79989	2	26566	16	74188	10038	52378	22	32383	5
20	83835	2	20249	15	64150	36	56099	21	19431	4
30	87681	45	13932	14	54112	37	59820	22	26479	3
40	91527	46	07616	13	44074	36	63542	21	23527	2
50	95373	45	01301	12	34038	37	67263	22	20575	1
31 0	99218	46	49594986	14	24001	36	70985	21	17623	0
10	60903063	45	88672	13	13965	37	74707	22	14670	50
20	06908	44	82358	12	03928	36	78430	21	11717	40
30	10754	45	76045	11	16393892	37	82153	22	08764	30
40	14599	44	69733	10	83856	36	85877	21	05811	20
50	18443	45	63421	9	73810	37	89601	22	02858	10
32 0	22288	44	57110	8	63784	36	93326	21	7929904	02
10	26133	43	50800	7	53749	35	97051	20	96951	50
20	29977	42	44490	6	43713	34	13100777	19	93997	40
30	33821	41	38181	5	33675	33	04502	18	91043	30
40	38665	40	31871	4	23644	32	08228	17	88088	20
50	43509	39	25564	3	13610	31	11954	16	85134	10
33 0	45353	38	19257	2	03576	30	15681	15	82175	027
10	49196	37	12951	1	26293543	29	19408	14	79225	50
20	53040	36	06645	0	83505	28	23136	13	76270	40
30	56883	35	00340	0	73476	27	26864	12	73314	30
40	60727	34	49494035	0	63443	26	30592	11	70355	20
50	64570	33	87731	0	53410	25	34321	10	67403	10
34 0	68413	32	81427	0	43378	24	38049	9	64448	026
10	72255	31	75124	0	33346	23	41778	8	61492	50
20	76098	30	68822	0	23314	22	45508	7	58536	40
30	79940	29	62521	0	13283	21	49238	6	55575	30
40	83783	28	56220	0	03251	20	52969	5	52623	20
50	87625	27	49920	0	26193221	19	56690	4	49666	10
35 0	91467	26	43621	0	83191	18	60430	3	46705	025
10	95309	25	37323	0	73160	17	64162	2	43752	50
20	99151	24	31024	0	63130	16	67894	1	40795	40
30	61002992	23	24727	0	53101	15	71626	0	37838	30
40	06874	22	18430	0	43071	14	75359	0	34880	20
50	10675	21	12134	0	33043	13	79091	0	31922	10
60	14516	20	05838	0	23014	12	82824	0	28964	024

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J.M.

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M. S.	Sinus.	D.	Logarith. D.	Different	D. Logarith.	D.	Sinus.	D.
36 °	6101456		49405338	26123014	19	23282824	79218964	60
10	18357		49399343	11985	34	86558	26006	58
20	22198		93249	02956	35	90293	23048	40
30	26039		86955	16091928	34	94027	20035	30
40	29880		80661	82900	35	97762	17131	20
50	33720		74369	72872	27	23301497	14172	10
37 °	37561		68077	62845	18	05232	11213	0 23
10	41401		61785	52817	7	08968	08253	50
20	45241		53494	42790	27	12704	05294	40
30	49081		49204	32763	26	16441	02334	30
40	52921		42915	22737	27	20178	79199374	20
50	56761		36626	12710	26	23917	96414	10
38 °	60000		30338	02684	26	27654	93454	023
10	64439		24050	25992658	39	31392	99494	50
20	68278		17763	82632	25	35151	87533	40
30	72117		11477	72607	26	38870	84572	30
40	75956		05191	62581	25	42610	81611	20
50	79795		49298906	52556	24	46350	78650	10
39 °	83633		92621	42531	15	50090	75685	021
10	87472		86337	32506	24	53831	72727	50
20	91310		80054	22482	15	57572	69766	40
30	95148		73771	12457	23	61314	66804	30
40	98986		67489	02434	24	65055	63842	20
50	61102824		61208	25892411	23	68797	60880	10
40 °	06662		54927	82388	11	72539	57917	020
10	10500		48647	72365	22	76282	54954	50
20	14337		42368	62343	11	80025	51991	40
30	18175		36089	52321	78	83768	49029	30
40	22012		29811	42199	77	87512	46065	20
50	25849		23533	32277	76	91256	43102	10
41 °	29686		17256	82255	23	95001	40139	019
10	33522		10980	72234	20	98746	37175	50
20	37359		04704	02214	10	02492	34211	40
30	41195		49198429	25792192	46	23406237	31247	30
40	45032		92155	82172	46	09083	28282	20
50	48868		85881	72152	47	13729	25318	10
60	52704		79608	62132		17476	22353	018

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J.M.

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M. S.	Sinus.	D.	Logarith.	D. Different.	D. Logarith.	D.	Sinus.	D.
42 0	61152704	36	49179608	25762132	19	23417476	79122353	60
10	56540		73336	52113	20	21223	19388	2965
20	60376		67064	42093	19	24971	16423	50
30	64211	35	60793	32074	18	28719	13458	30
40	68047	36	54523	22056	19	32467	10493	20
50	71882	2815	48253	12017	19	36216	07527	10
43 0	75717		41984	02019	10018	39965	04561	017
10	79552		35716	25692001	17	43715	01595	50
20	83387		29448	81983	17	47465	79098629	40
30	87222	34	23181	71965	17	51216	95663	30
40	91056	35	16914	61948	17	54966	92696	20
50	94891	34	10648	51931	17	58717	89730	10
44 0	98725		04382	41914	16	62468	86763	010
10	61202559		49098117	31897	16	66120	83796	50
20	06393		91853	21881	15	69972	80828	40
30	10227		85585	11865	15	73724	77861	30
40	14061		79326	01845	15	77477	74893	20
50	17895	33	73064	25591834	16	81230	71925	10
45 0	21728		66802	81818	15	84984	68957	015
10	25561		60541	71803	15	88738	65985	50
20	29394		54280	61787	15	92493	63021	40
30	33227		48020	51771	14	96248	60052	30
40	37060		41761	41758	15	3500003	57083	20
50	40893		35502	31743	13	03755	54112	10
46 0	44726	32	29244	21730	14	07514	51145	014
10	48558		22987	11717	14	11270	48176	50
20	52390		16730	01703	13	15027	45207	40
30	56223	33	10474	5491690	14	18784	42237	30
40	60055	32	04218	81676	13	22542	39267	20
50	63886	31	45997963	71663	12	26300	36297	10
47 0	67718	32	91709	61651	13	30058	33327	013
10	71550		85455	51638	11	33817	30356	50
20	75381	31	79202	41616	11	37576	27386	40
30	79212		72950	31614	11	41336	24415	30
40	83043		66698	21603		45095	21444	20
50	86874		60447	11592		48855	18473	10
60	90705		54196	01581		52615	15501	012

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S. M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48	61290705	31	48954196	50	25401581	11	23552615	61	79015501	60
10	94536		47946	50	25391970	11	56376	62	12530	50
20	98367		41697	50	81560	100	60137	63	09558	40
30	61302197	31	35448	48	71550	100	63898	64	06586	30
40	06027		29200	48	61540	100	67660	65	03614	20
50	09857		22953	47	51531	100	71412	66	00642	10
49	13687		16706		41521	100	75185	67	78997665	73
10	17517		10460	46	31512	100	78948	68	94696	50
20	21347		04215	45	21503	100	82712	69	91724	40
30	25177	29	48897970	44	11495	100	80473	70	88751	30
40	29006		91726	44	01487	100	90239	71	85777	20
50	32835		85482	43	25291479	100	94003	72	82804	10
50	36664		79239	42	81471	100	97768	73	79830	0 10
10	40493		72997	42	71464	100	23601533	74	76857	50
20	44322		66755	41	61456	100	05299	75	73883	40
30	48151	28	60514	40	51449	100	09065	76	70908	30
40	51979	29	54274	40	41443	100	12831	77	67934	20
50	55808	28	48034	39	31436	100	16598	78	64960	10
51	59636		41795	38	21430	100	20365	79	61985	0 9
10	63464		35557	38	11424	100	24133	80	59010	50
20	67292		29319	37	01418	100	27901	81	56035	40
30	71120		23082	36	25191412	100	31670	82	53060	30
40	74948	27	16845	36	81407	100	35438	83	50084	20
50	78775	28	10609	35	71402	100	39207	84	47109	10
52	82603	27	04373	35	61397	100	42976	85	44133	0 8
10	86430		48798138	34	51392	100	46746	86	41157	50
20	90257		91904	33	41388	100	50516	87	38181	40
30	94084		85671	32	31384	100	54287	88	35104	30
40	97911		79438	32	21380	100	58058	89	32228	20
50	61401737	26	73206	31	11377	100	61829	90	29251	10
53	05564	26	66974	31	01373	100	65601	91	26274	0 7
10	09390	27	60743	30	25091370	100	69373	92	23297	50
20	13217	27	54513	30	81368	100	73145	93	20320	40
30	17043	26	48283	29	71365	100	76918	94	17342	30
40	20869	25	42054	28	61363	100	80691	95	14364	20
50	24694	26	35825	28	51360	100	84465	96	11386	10
60	28520	26	29597	28	41358	100	88239	97	08408	0 6

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Grad. 37.

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M. S.	Sinus.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54 0	61418510	18719597	6	15041158	10002	23688139	7	78908408	60
10	31146	33370	6	31354	10002	92014	7	05430	50
20	36171	17142	6	21354	10002	95789	7	01452	40
30	39996	10917	6	11353	10002	99564	7	78899473	30
40	43821	04691	6	01351	10002	13703340	7	96494	20
50	47646	48698466	6	84991351	10002	07115	7	93515	10
55 0	51471	91241	14	81351	01	10891	76	90536	0
10	55296	86018	14	71350	01	14668	77	87557	5
20	59120	79795	14	61350	01	18445	78	84577	0
30	62944	73573	15	51351	01	22222	79	81598	5
40	66769	67351	15	41351	01	26000	80	78618	0
50	70593	61130	15	31352	01	29778	81	75638	5
56 0	74417	54909	13	21352	01	33557	82	72657	0
10	78240	48689	13	11353	01	37336	83	69677	5
20	82064	42470	13	01355	01	41115	84	66696	0
30	85888	36251	13	24891356	99	44895	85	63716	5
40	89711	30033	13	81358	99	48675	86	60735	0
50	93534	23815	13	71360	99	52455	87	57753	5
57 0	97357	17598	17	61361	99	56236	88	54772	0
10	61501180	11382	16	51365	97	60017	89	51790	5
20	05003	05166	15	41367	98	63799	90	48809	0
30	08826	48598951	15	31370	97	57581	91	45827	5
40	12648	91737	14	21374	96	71363	92	42845	0
50	16470	86523	13	11377	97	75146	93	39861	5
58 0	20293	80310	13	01381	96	78929	94	36880	0
10	24115	74097	12	24791384	97	82713	95	33897	5
20	27936	67885	12	81388	96	86497	96	30914	0
30	31758	61674	11	71393	95	90281	97	27931	5
40	35580	55463	11	61397	96	94066	98	24948	0
50	39401	49253	10	51403	94	97850	99	21965	5
59 0	43223	43044	09	41409	93	13801635	85	18981	0
10	47044	36836	08	31416	94	05430	86	15997	5
20	50865	30628	07	21421	93	09206	87	13013	0
30	54686	24421	07	11429	93	12992	88	10029	5
40	58506	18214	06	01435	94	16779	89	07045	0
50	62327	12008	06	14691442	93	20566	90	04060	5
60	66148	05801	07	81448	94	24353	91	01075	0

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S.M.

Grad. 38.

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M.S.	Sinus.	D.	logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	61566148	3010	48505801	06	23681448	94	23814353	88	78801075	60
10	69968		48499595	05	71454		28141		78798090	50
20	73788		93390	04	61460		31930		95105	40
30	77608		87186	03	51467	93	35719	3789	92126	30
40	81428		80983	02	41475	92	39508	90	89135	20
50	85248	19	74781	01	31483	91	43298		86149	10
1	89067	10	68580	00	21492	90	47088		83163	059
10	92887	19	62375	00	11501		50878	91	80177	50
20	96706		56179	01	01510	93	54669		77191	40
30	61600535		49978	00	2459518		58460	92	74105	30
40	04344		43778	00	81526	91	62252		61218	20
50	08163		37579	00	71535	90	66044		68231	10
1	11981	18	31381	99	61545		69836	93	65244	058
10	15800	19	25184		51555		73629		62257	50
20	19619	18	18987	96	41565	89	77422	94	59270	40
30	23437		12791		31575		81216	93	56282	30
40	27255		06595		21586		85009	94	53295	20
50	31073		00400	95	11597		88803		50307	10
3	34891		48394205	94	01608		92597	95	47319	057
10	38709	17	88011	93	24491619	88	96392		44331	50
20	42526	16	81818	92	81631	87	23900187		41342	40
30	46344	17	75626		71644	88	03982	96	38354	30
40	50161		69434		61656	87	07778		35365	20
50	53978		63243	91	51669	88	11574		32376	10
4	57795		57052	90	41681	87	15371	97	29387	056
10	61612		50862	89	31694	86	19168		26397	50
20	65429	16	44673	88	21708	87	22965	98	23408	40
30	69245	17	38484	88	11721	86	26763		20418	30
40	73062	16	32296		01735	87	30561	99	17428	20
50	76878		26108	87	24391748	86	34360		14438	10
5	80694		19921	86	81762	85	38159		11448	055
10	84510		13735		71777	86	41958		08457	50
20	88326		07549	85	61791	86	45758	100	05467	40
30	92141	15	01364		51806		49558		02476	30
40	95957	16	48295179	84	41821		53358	01	78699485	20
50	99773	15	88995	83	31836		57159		96494	10
60	61703588	16	82812		21852	84	60960		93502	054

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S.M.

Grad. 38.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
5 0	61703588		48282812	83	24321852	85	23960960		78693502	60
10	07403	15	76629	83	11867	85	64762	02	90511	50
20	11218		70447	83	01883	84	68564		87519	40
30	15032	14	64266	60	14291899	983	72367	03	84527	30
40	18847	15	58085	80	18916		76169	02	81535	20
50	22662		51905	80	71933		79972	03	78543	10
7 0	26476	384	45725	79	61950		83775	04	75550	053
10	30290		39546	78	51967	82	87579		72557	50
20	34104		33368	78	41985	82	91383		69564	40
30	37918		27190	77	32002	82	95188	3805	66571	30
40	41732		21013	77	22020	82	98993		63578	20
50	45546		14836	76	12083		14002798	06	60585	10
8 0	49359	13	08660	75	02056	81	06604		57591	94
10	53172	14	02485	74	14192075	82	10410	07	54597	50
20	56986	13	48596310	74	82093	81	14217		51603	40
30	60799		90136	73	72112		18024		48609	30
40	64612	12	83962	73	62131		21831		45615	20
50	68424	13	77789	72	52150	80	25639	08	42621	10
9 0	72237		71617		42170		29447		39626	95
10	76050	12	65445	71	32190		33255	09	36631	50
52	79862		59274		22210		37064		33636	40
30	83674		53103	70	12230		40873	10	30640	30
40	87486		46933	69	02259	75	44683		27645	20
50	91298		40764	68	24092271	78	48493		24649	10
10 0	95110	11	34596		82293	75	52303	11	21654	95
10	98921	12	28428	67	72314	75	56114		18658	50
20	61802733	11	22261	67	62336	78	59925		15661	40
30	06544		16094	66	52355		63736	12	12665	96
40	10355		09928	65	42380		67548		09668	97
50	14166		03762	65	32402		71360	13	06672	56
11 0	17977	48097597		64	22424	77	75173		03675	97
10	21788		91433	64	12447	78	78984	14	00678	049
20	25599	10	85269	63	02469	77	82800		78597680	98
30	29409		79106		23992492		86614		94683	97
40	33219	11	72943	62	82515		90428	15	91685	98
50	37030	10	66781	61	72583	75	94243	14	88687	10
60	40840		60610		62563		98057		85689	048

Grad. 39.

S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
12 0	61340840	09	48060610	50	23962563	75	24098057	15	78585689	90
10	44649	10	54460	60	52558	76	24101872	16	82691	98
20	48459		4820		42612	75	05688		79693	40
30	52209	3809	4214	8	32637	76	09504	2017	76694	30
40	56078		3398	8	22661	75	13321		73695	20
50	59887		29824	8	12686	9975	17138		70696	10
13 0	63696		23661	57	02711		20955	18	67697	0+
10	67505		1750	6	23892736	74	24773		64698	10
20	71314		11353		82762	75	28591	19	61699	40
30	75123	08	0519	75	72787	73	32410	18	58699	3000
40	78932		799904	4	62814		36228	19	55699	10
50	82740		92888	4	52841		40047		52699	10
14 0	86548		86734	13	41868		43866	10	49698	046
10	90350		8058		32895		47686		46698	50
20	94164		74426	12	22922		51506	11	43698	40
30	97971		68271	11	12949	71	55327		40697	30
40	61901780		62121		02977		59148		37696	20
50	05588	09	55974	50	23793005	12	62969		34694	10
15 0	09395		49824		83033		66791		31693	045
10	13102		43674	49	73061		70613	23	28692	50
20	17009		37525	48	63089	71	74436		25690	40
30	20816		31377		53118		78259		22688	30
40	24623		25229	47	43147		82082		19686	20
50	28430	01	19082	46	33176	70	85906	24	16684	10
16 0	32236		12936		23106	71	89730	25	13681	044
10	36042		06790	45	13235	65	93555	24	10678	50
20	39843	01	00645	44	03266		97379	25	07676	40
30	43654		7894501		23693297	70	4301204	26	04673	30
40	47460		88357	43	83327	69	05030		01669	20
50	51266		82114		73358		08856		79408666	10
17 0	55072		76071	42	63389		12682		95662	043
10	58878	05	69929		53420		16509	27	92659	30
20	62683		63787	41	43451	68	20336		80655	40
30	66488		57646	40	33483		24163		86651	20
40	70293		51506		23515		27991	28	83646	10
50	74098		45366	39	13547		31819	29	80642	05
60	77903		39227		03579		35648		77637	042

Grad. 40.

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Grad. 38.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	61977903	05	47839227	6138	23603579	967	24235648	29	78477637	60
10	81708	04	33089	37	23593612	967	39477	30	74632	50
10	85512	05	26951	36	83645	967	43306	30	71627	40
30	89317	3804	20813	35	73678	66	47136	31	68622	30
40	93121	04	14677	34	63711	66	50966	31	65616	20
50	96925	04	08541	34	53744	65	54797	31	62611	10
19 0	62000729	03	01405	33	43777	66	58628	31	59605	06
10	04533	03	47796270	34	33811	65	62459	31	56599	041
10	08336	04	90136	33	23845	65	66291	31	53593	07
30	12140	03	84002	33	13879	63	70123	31	50586	06
40	15943	03	77869	32	03913	64	73956	31	47580	07
50	19746	02	71737	31	23493948	63	77789	31	44573	10
20 0	23549	02	65605	31	83983	63	81622	34	41566	040
10	27352	02	59474	30	74018	64	85456	35	38559	50
10	31155	03	53343	29	64053	64	89290	35	35552	40
30	34957	03	47213	29	54088	63	93125	34	32545	08
40	38760	02	41084	28	44125	63	96959	35	29537	20
50	42562	01	34955	27	34161	63	14300794	36	26525	10
21 0	46364	01	28827	27	24198	62	04629	37	23521	039
10	50166	01	22700	26	14235	61	08465	38	20513	50
50	53968	01	16573	25	04272	61	12301	38	17505	40
30	57770	01	10447	24	23394309	61	16138	39	14496	09
40	61571	01	04321	23	84346	61	19975	39	11487	30
50	65273	01	47698196	22	74384	61	23812	39	08478	20
22 0	69174	00	92071	21	64421	61	27650	40	05465	10
10	72975	00	85947	20	54458	61	31489	41	02460	038
10	76776	00	79824	19	44497	61	35327	41	78399451	50
30	80577	00	73701	18	34535	61	39166	42	96441	40
40	84378	00	67579	17	24574	60	43005	42	93431	30
50	88178	01	61458	16	14613	60	46845	43	90421	20
23 0	91979	00	55337	15	04652	59	50685	43	87411	10
10	95779	00	49217	14	23294691	59	54526	44	84400	037
10	99579	00	43097	13	84730	59	58367	44	81390	50
30	62103379	00	36978	12	74769	59	62109	45	78379	40
40	07179	00	30860	11	64810	60	66050	45	75368	30
50	10979	00	24741	10	54850	60	69692	46	72357	20
60	14779	00	18625	9	44891	59	73734	46	69346	10

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S.M.

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M.S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinu.	L.
24 0	62114779		47618635		13244891		14373734		78369346	60
10	18578	1799	12509	616	34932	59	77577	385	66334	50
20	12377		06393		14973		81420	345	63322	40
30	26176		00278		15015	58	85263	44	60310	30
40	29975	98	47594163	14	05056	58	89107		57298	20
50	33773	99	88045		13195098	59	92951	45	54186	10
25 0	37572		81935	13	85139	58	96796		5174	035
10	41371	98	75822	12	75181	57	14400641		4861	50
20	45169		69710		65224	58	04486	46	45249	40
30	48967		63598	11	55266		08332		42236	30
40	52765		57487	10	45309	9957	12178	47	39213	20
50	56563		51377		35352		16015		36209	10
26 0	60361		45267	09	25395		19872	48	33196	034
10	64159	97	39158		15438		33720		30182	50
20	67956		33049	08	05481	56	27568	48	27168	40
30	71753		26941	07	13095525		31416	49	24154	30
40	75550	98	20814		85569		35265	48	21140	20
50	79348	97	14727	06	75614	55	39113	49	18125	10
27 0	83145	96	08621	05	65659		42962	50	15111	033
10	86941	97	02516		55704		46812		12026	50
20	90738	96	47496411	04	45749	54	50661	50	09081	40
30	94534		90307		35795	54	54512	51	06066	30
40	98331	97	84203		25840	54	58363		03050	20
50	61102127	96	78100	03	15886	55	62214	52	00035	10
28 0	05923		71997	02	05931		66066	53	78297019	032
10	09719		65895	01	1595976	53	69919	52	94003	50
20	13514	95	59794		86023	54	73771	53	90987	40
30	17310	96	53693	00	76069	53	77624		87970	30
40	21105	95	47593		66116		81477		84954	20
50	24901	96	41493	99	56163		85330	54	81937	10
29 0	28696	95	35394	99	46210	52	89184		78921	031
10	32491		29196	99	36258	53	93018	55	75904	50
20	36286		23198	97	26305	52	96893		72886	40
30	40080	94	17101		16353		14509748		69869	30
40	43874		11004	96	06401		04603		66851	20
50	47669	95	04908	95	12896449	51	08459	56	63834	10
60	51464		47398813		86498		12315		60816	030

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M	S	Sinu.	D.	Logarith.	D.	Different.	D	Logarith.	D.	Sinu.	D.
30	0	62351464	7994	47398813	95	12886498	52	24512315	57	78260816	60
10		55258		92718	95	76546	52	16172	57	57798	50
20		59052		86624	94	66595	51	10019	58	54779	40
30		62846	93	80531	6093	56644	9950	23887	57	51761	30
40		66639	94	74438	92	46694		27744	58	48743	20
50		70433	93	68346	92	36744		31602		45723	10
31	0	74226		62254	91	26794		35460	59	42704	029
10		78019		56163	90	16844	49	39319		39685	50
20		81812		50073	89	06895	50	43178	3060	36666	40
30		85605		43983	89	12796945	49	47038		33646	30
40		89398		37894	88	86996	48	50898		30626	20
50		93191	92	31805	87	77047	48	54758	61	27606	10
32	0	96983	13	25717	87	67098	48	58619		24586	028
10		61300776	92	19630	86	57190	49	62480	62	21566	50
20		04566		13543	86	47301	48	66342		18545	40
30		08360		07457	85	37293	48	70204		15524	30
40		12152		01371	84	27305	47	74066	63	12504	20
50		15943	91	47295186	84	17357	47	77929		09483	10
33	0	19735	92	89202	83	07410	47	81792	64	06461	027
10		23527	91	83118	83	12697462	48	85656		03440	50
20		27318		77035	82	87515	48	89520	65	00418	40
30		31109		70952	81	77567	46	93385	64	78197396	30
40		34900		64870	81	67621		97149	55	94374	20
50		38691		58789		57675	14601114			91355	10
34	0	42482		52708	80	47729		04979	66	88330	026
10		46273	90	46628	79	37783		08845		85307	50
20		50063		40548	78	27837	45	12711	67	82285	40
30		53853		34469	77	17891		16578		79262	30
40		57643		28391	76	07946	44	20445		76239	20
50		61433		22313	75	12598001		24312	68	73215	10
35	0	65223		16236	74	88056		28180		70192	025
10		69013		10160	73	78112		32048		67168	50
20		72803	89	04084	72	68168		35916	69	64144	40
30		76592	90	47198009	71	58224		39785		61120	30
40		80382	89	91934	70	48280		43614	70	58096	20
50		84171		85860	69	38336	43	47524		55071	10
60		87960		79787	73	28393		51394		51047	024

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different	D	Logarith.	D.	Sinus.	D.	
36 0	61387960	89	47179787	73	31528393	0043	24651394	70	78152047	16	60
10	91749	88	73714	60	18450	0043	55264	71	49022	16	50
20	95537	89	67643	71	08507	0043	59135	71	45997	16	40
30	99326	88	61570	71	22498564	42	63006	72	42972	16	30
40	62403114	88	55499	70	88611	42	66878	73	39947	16	20
50	66902	89	49429	70	78679	42	60750	73	36922	16	10
37 0	106691	88	43359	69	68737	41	74612	73	33896	16	023
10	14479	87	37290	68	58795	41	78495	74	30870	16	50
20	18266	88	31221	67	48853	41	82368	74	27844	16	40
30	22054	89	25153	66	38912	40	86241	75	24818	16	30
40	25842	88	19086	65	28971	40	90115	75	21792	16	20
50	29629	89	13019	64	19030	40	93989	76	18765	16	10
38 0	33416	88	06953	63	09089	40	97864	76	15738	16	022
10	37203	87	00887	62	11599148	40	14701739	77	12711	16	50
20	40990	88	47094822	61	89108	40	05614	77	09684	16	40
30	44777	89	88758	60	79268	39	09490	78	06657	16	30
40	48564	88	82694	59	69328	39	13366	78	03629	16	20
50	52350	89	76631	58	59388	39	17243	79	00602	16	10
39 0	56136	88	70568	57	49448	38	21120	79	78097574	16	021
10	59922	87	64506	56	39509	38	24997	80	94546	16	50
20	63700	88	58445	55	29570	38	28875	80	91517	16	40
30	67495	89	52384	54	19631	37	32753	81	88489	16	30
40	71280	88	46324	53	09692	37	36632	81	85460	16	20
50	75066	89	40264	52	11199753	36	40511	82	82432	16	10
40 0	78851	88	34205	51	89815	36	44390	83	79403	16	020
10	82637	87	28147	50	79878	36	48269	84	76374	16	50
20	86422	88	22089	49	69940	36	52149	84	73344	16	40
30	90207	89	16032	48	60001	36	56030	85	70315	16	30
40	93992	88	09975	47	50064	36	59911	85	67285	16	20
50	97777	89	03919	46	40127	36	63792	86	64255	16	10
41 0	61501561	88	46997864	45	30191	36	67673	87	61225	16	019
10	05346	87	91809	44	20254	36	71555	88	58195	16	50
20	09130	88	85755	43	10317	36	75438	88	55164	16	40
30	12914	89	79701	42	00380	36	79321	89	52134	16	30
40	16698	88	73648	41	11390444	36	83204	89	49103	16	20
50	20482	89	67596	40	80508	36	87088	90	46072	16	10
60	24266	88	61544	39	70571	36	90972	90	43041	16	018

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M. S.	Sinus.	D.	Logarith. D.	Different.	D.	Logarith. D.	Sinus.	D.
42° 0'	62524366	83	46961544	22170571	36	14790971	78043041	60
10	28049	83	55493	60636	36	94857	40009	59
20	21833	84	49442	59701	35	98741	36978	40
30	35616	3783	43392	40766	34	14802636	33946	30
40	39399	83	37343	30832	35	06511	30914	10
50	43182	83	31294	20897	35	10397	27882	10
43° 0'	46965	82	25246	10963	9934	14283	24850	017
10	50747	83	19199	01029	34	18170	21817	32
20	54530	83	13152	22091095	35	22057	18785	50
30	58312	83	07106	81161	33	25945	15752	30
40	62095	82	01060	71228	33	29832	12719	10
50	65877	82	46895013	61295	33	33720	09686	10
44° 0'	69659	81	88970	51362	32	37608	06652	016
10	73440	81	82926	41429	32	41497	03619	50
20	77222	81	76883	31497	33	45386	00585	40
30	81004	81	70840	21564	32	49276	77997551	30
40	84785	81	64798	11632	31	53166	94517	20
50	88566	81	58757	01701	31	57056	91483	10
45° 0'	92347	80	52716	21991769	31	60947	88448	015
10	96128	80	46676	21833	32	64838	85414	50
20	99909	80	40636	71906	31	68730	82379	40
30	62603690	80	34597	61975	30	72622	79344	30
40	07470	80	28559	52045	31	76514	76309	20
50	11250	80	22521	42114	30	80407	73273	10
46° 0'	15030	80	16484	32184	31	84300	70238	014
10	18810	80	10447	22253	30	88194	67202	50
20	22590	80	04412	12323	30	92088	64168	40
30	26370	79	46798376	02393	29	95983	61180	30
40	30150	79	92341	21892464	34	99877	58094	20
50	33929	79	86307	81535	35	14903772	55057	10
47° 0'	37708	80	80273	72606	33	07667	52020	013
10	41488	79	74240	62677	32	11563	48984	50
20	45267	78	68207	52748	31	15459	45946	40
30	49045	79	62175	42819	28	19356	42909	30
40	52824	78	56144	32891	31	23253	39872	20
50	56603	78	50113	22963	30	27150	36834	10
60	60381	78	44083	13035	30	31048	33796	012

Grad. 39.

S.M.

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M. S.	Sinas.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinas.	D.
48 0	62660381		46744083		21813035		24931045		77933796	
10	64159	1770	38054	29	03108	17	34746	98	30758	30
20	67937		32025		11793180	18	36845		27720	40
30	71715		25997		83253	17	42741		24681	30
40	75493		19969		71326	18	46641		21644	20
50	79271		13941	17	63398	17	50543		18101	10
49 0	83049	77	07914	26	53471	17	54443		15586	0 11
10	86826		01888	25	43544	16	58344		12527	50
20	90603		46695863		33618	16	62245		09488	40
30	94380		89838	14	23691	17	66147	02	06448	40
40	98157		83814		13766	15	70048	01	03409	39
50	65701934		77750		03840	16	73950	02	00369	40
50 0	05711	76	71767	23	21693915	15	77852	03	77897329	0 10
10	09487		65745	21	83990	24	81755		94289	50
20	13263		59724		74066	25	85658		91248	41
30	17040	77	53703		64141	25	89562	04	88208	40
40	20816	76	47681		54216	24	93466		85167	39
50	24592	75	41662	10	44292	14	97370		82126	10
51 0	28367	75	35642	19	34367	15	25001275	05	79085	0 9
10	32143	76	29623	18	24443	0924	05180	06	76044	50
20	35918	75	23605		14519		09086		73003	40
30	39694	76	17587	17	04595	13	12992		69961	30
40	43469	75	11570	16	21994672		16898		66919	20
50	47244		05554		84749		20805	07	63877	10
52 0	51019		46599538	15	74826		24712		60835	0 8
10	54794		93523		64903		28610	08	57793	50
20	58568	74	87508	14	54980		32528		54750	41
30	62343	75	81494	13	45057	21	36437	09	51708	43
40	66117	74	75481		35136	21	40345	08	48665	30
50	69891		69468		25214	21	44254	09	45622	20
53 0	73665		63456	12	15293		48163		42578	44
10	77439		57445	11	05372		52073	10	39535	43
20	81212	73	51434		21495451		55983		36491	44
30	84986	74	45424	10	85531	20	59893		33447	30
40	88759	73	39414		75610	21	63804	11	30403	10
50	92533	74	33404		65689		67715	12	27355	10
60	96306	73	27395	09	55768		71627		24315	0 6

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
54 0	62796306		46527395	08	21455768		25071627	12	77824315		60
10	62800079	73	21387		45848		75839		21170	45	50
20	03852	72	15380	6007	35928	020	79452	0015	18226	44	40
30	07614	73	09373		26008		83365	0015	15181	43	30
40	11397	73	03366	06	16088		87278	14	12136	46	20
50	15169	3772	46497360	05	06163	19	91192	14	09090	45	10
55 0	18941		91355		21396249	10	95106	15	06045	45	0
10	22713		85350	04	86329	19	99021	15	02999	44	50
20	26485		79346	03	76410	19	15102931	16	77799953	43	40
30	30257		73343		66491	18	06852	16	96907	42	30
40	34029	71	67340	01	56573		10767	15	93861	41	20
50	37800	71	61338	03	46655	19	14683	16	90815	47	10
56 0	41571	72	55335	02	36736		18595	7	87768	46	0
10	45343	71	49333	01	26817	18	22516		84722	47	50
20	49114		43332	00	16899		26431	18	81675	47	40
30	52885	70	37331		06981		30351	18	78628	48	30
40	56655	71	31331	98	21297063	16	34269		75580	48	20
50	60426	70	25334	97	87147		38187	19	72553	47	10
57 0	64196	71	19337		77231		42106	19	69485	48	0
10	67967	70	13340	96	67315		46025	20	66437	49	50
20	71737		07344	95	57399		49945	20	63385	49	40
30	75507		01348		47483		53865		69341	49	30
40	79277	69	46395351	95	37567		57785	21	57293	48	20
50	83046	70	89357	94	27651		61706	21	54245	48	10
58 0	86816	69	83362		17735		65627	22	51195	49	0
10	90585	70	77368	93	07815	15	69545	22	48146	50	50
20	94355	69	71375	92	11197904		73471	23	45097	50	40
30	98124		65383		87985		77394	23	42048	51	30
40	62901893		59391	91	78075	14	81316	22	38999	50	20
50	05662	68	53400		68161		85239	23	35941	50	10
59 0	09430	69	47409		58247		89162	24	32895	51	0
10	13199	68	41419	90	48333	13	93086	24	29845	50	50
20	16967		35430	89	38420		97010	25	26795	51	40
30	20735		29441	88	28507		15200934	25	23748	51	30
40	24503		23453		18594		04859	26	20698	50	20
50	28271		17465	87	08681		08784	26	17641	51	10
60	32039		11478		21098768		12710		14596	50	0

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S.M.

Grad. 39.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0 0	61931039	68	46311478	5986	11098768	9912	35212710	26	77714596	60
10	35807	67	05492	85	88856	9912	16636	27	11545	51
20	39574	68	46199506	85	78944	9912	20561	27	08494	40
30	43342	67	93521	84	69032	9912	24485	27	05442	30
40	47109	67	87536	84	59120	9912	28416	27	02391	20
50	50876	67	81552	84	49208	9912	32344	27	77699339	10
1 0	54643	66	75568	83	39296	11	36272	29	96287	53
10	58409	67	69585	81	29385	11	40200	30	93234	42
20	62176	67	63601	81	19473	11	44125	30	90182	30
30	65943	766	57620	81	09561	10	48058	31	87129	20
40	69709	766	51639	80	10999651	10	51986	31	84077	10
50	73475	766	45658	80	89740	10	55916	31	81024	0
2 0	77241	65	39675	79	79830	11	59848	32	77971	54
10	81007	65	33698	78	69919	11	63775	32	74917	42
20	84773	65	27719	77	60009	11	67710	32	71864	30
30	88538	65	21740	77	50098	10	71642	33	68810	20
40	92304	65	15761	76	40188	10	75574	34	65751	10
50	96065	65	09785	75	30279	10	79506	34	62702	0
3 0	99834	64	03808	74	20369	09	83435	35	59648	57
10	63003599	64	46197832	74	10460	09	87372	35	56594	45
20	07364	64	91856	73	00510	09	91301	36	53535	33
30	11128	64	85885	73	10890641	08	95240	36	50484	20
40	14893	64	79907	72	80733	08	99174	37	47425	10
50	18657	64	73933	71	70824	08	10303105	37	44374	0
4 0	22422	63	67960	71	60916	07	07044	38	41311	56
10	26186	63	61988	70	51008	07	10980	38	38263	45
20	29950	63	56016	70	41100	07	14911	39	35208	33
30	33713	63	50045	69	31191	07	18853	39	32152	20
40	37477	63	44072	68	21285	06	22789	40	29096	10
50	41240	63	38104	68	11378	06	26726	40	26035	0
5 0	45004	63	32135	67	01472	06	30663	41	22983	56
10	48767	63	26167	67	10791566	05	34601	41	19921	45
20	52530	63	20199	66	81660	05	38539	42	16870	33
30	56293	63	14231	66	71754	05	42478	42	13813	20
40	60056	63	08265	66	61848	05	46417	43	10756	10
50	63818	63	02299	66	51943	05	50356	43	07698	0
60	67581	63	46096333	66	42037	06	54296	44	04641	57

Grad. 40.

S.M.

Ddd

Grad. 39.

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M. S.	Sinus.	D.	Logarith.	D.	Different	D	Logarith.	D.	Sinus.	D.
6	63067181	5761	46096333	65	10741037	905	25354296	40	77604641	60
10	71343		90368	65	32132	905	58236	40	01583	50
20	75105		84404	65	22227	905	62177	40	7798525	40
30	78867		78440	63	12322	04	66118	41	95467	30
40	82629		72477	63	02418	04	70059	42	92409	20
50	86391	61	66515	61	10693514	04	73001	42	89350	10
7	90152	61	60553	61	82610	03	77943	43	86292	59
10	93914	61	54592	61	72707	03	81885	43	83233	50
20	97675	61	48631	60	62803	03	85828	43	80174	40
30	63101436		42671	59	52900	03	89771	44	77115	30
40	05197		36712	59	42997	03	93715	44	74050	20
50	08958		30753	58	33094	03	97659	45	70996	10
8	12719	60	24795	59	23191	06	25401604	45	67936	59
10	16479	61	18836	58	13287	03	05549	46	64876	50
20	20240	60	12878	58	03384	03	09494	46	61816	40
30	23000	60	06920	57	10593480	03	13440	47	58756	30
40	27760		00963	56	83577	03	17386	47	55696	20
50	31520		45995006	56	73674	03	21332	47	52635	10
9	35280	59	85050	55	63771	02	25279	48	49574	59
10	39039	60	83095	55	53869	03	29226	48	46513	50
20	42795	59	77140	54	43966	01	33174	49	43452	40
30	46558	59	71186	53	34064	01	37122	49	40391	30
40	50317		65233	53	24163	01	41070	50	37329	20
50	54076		59280	52	14261	01	45019	50	34268	10
10	57835	58	53328	51	04360	01	48968	51	31206	59
10	61594	58	47377	50	10494459	00	52918	51	28144	50
20	65352	59	41426	50	84558	00	56868	51	25082	40
30	69111	58	35476	49	74657	00	60819	52	22019	30
40	72869	58	29516	48	64757	00	64769	52	18956	20
50	76627	57	23577	48	54857	989	68720	53	15894	10
11	80385	57	17629	47	44958	989	72671	53	12831	59
10	84143	57	11681	47	35058	989	76623	54	09767	50
20	87901	57	05734	46	25159	989	80575	54	06704	40
30	91658	58	4989788	45	15260	989	84528	55	03641	30
40	95416	57	93842	45	05361	989	88481	55	00577	20
50	99173	57	87897	45	10395463	989	92434	56	77497513	10
60	63201930		81952	44	85564	99	96388	56	94449	08

Grad. 50.

S.M.

Grad. 39.

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M.S.	Sinns.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinns.	D.
12	963102930		45881952		20385564		25496388		77494449	60
10	06687	357	76008	104	75666	98	25500342	54	91388	64
10	10444		70064	43	65767	99	04297	3055	88320	65
30	14201		64131	42	35869	98	08251		85150	64
40	17957	56	58179	41	45972	97	1220	56	82191	3065
50	21714	57	52137	41	36074	97	16163		79126	10
13	0		46296		26177	98	20119	57	76061	60
10	19226		40355	40	16275	97	24076		71555	64
20	33983		34415	39	06381	97	28033	58	69930	65
30	36738		28475	38	20196483	906	31591	58	66864	66
40	40493	51	22537	37	86580		35948	57	63798	30
50	44249	56	16599	36	76693		39900	56	60732	20
14	0		10661		66757		43864	59	57666	10
10	11759		04724	36	56901	95	47323		54595	60
20	55514		45798788	35	47006	94	51782	60	51533	64
30	59269		92852	34	37110	95	55742	61	48466	67
40	63024		86917	33	27215	95	59702		45399	30
50	66775		80982	32	17320		63661	62	42332	20
15	0		75948		07425		67623	63	39264	10
10	74287		69115	31	20197531	94	71584	62	36197	68
20	78041		63182	30	87636	95	75546		33129	64
30	81795		57250	29	77742	94	79508	63	30061	69
40	85549		51318	28	67847	95	83471		26993	30
50	89303		45387	27	57953	94	87434	64	23925	20
16	0		39456		48059		91397	65	20856	10
10	96810		33526	26	38165		95361	64	17788	68
20	63300563		27597	25	28272	93	99325		14719	69
30	04316		21668	24	18379		25603289	65	11650	30
40	08069		15740	23	08486		07254		08581	20
50	11822		09812	22	10098593		11215	66	05511	10
17	0		03885		88700		15185	67	02442	70
10	19327		45697959	21	78803	92	19151		77399372	60
20	23079		92033	20	68916		23117	67	96302	40
30	26832		86108	19	59024		27084		93131	30
40	30584		80183	18	49132		31051	68	90162	20
50	34336		74359	17	39240		35019		87092	10
60	38087		68335		29348		38987		84031	041

Grad. 40.

S.M.

Ddd 2

Grad. 39.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D	Logarith.	D.	Sinu.	D.
18 0	63338087	52	45668335	23	20029348	92	25638987	69	77384021	60
10	41839	51	62412	23	19456	91	42956	69	80950	50
20	45590	51	56490	19	09565	91	46925	70	77879	40
30	49342	51	50568	21	19994673	91	50895	70	74808	30
40	53093	51	44647	21	89783	90	54864	69	71737	20
50	56844	50	38726	10	79891	91	58834	70	68665	10
19 0	60594	51	32806	19	70002	89	62804	59	65593	0 41
10	64345	50	26887	19	60112	90	66775	59	62521	50
20	68096	50	20968	18	50222	89	70746	59	59449	40
30	71846	51	15050	17	40333	90	74717	72	56377	30
40	75597	50	09132	17	30443	89	78689	72	53305	20
50	79347	50	03213	16	20554	90	82661	73	50232	10
20 0	83097	49	45597298	16	10664	89	86634	74	47159	0 40
10	86847	49	91382	15	00775	88	90607	74	44086	30
20	90596	49	85467	15	19890887	89	94580	74	41013	20
30	94347	49	79552	14	80998	88	98554	75	37940	10
40	98098	49	73638	13	71110	89	102528	75	34866	0 39
50	6340184	48	67724	12	61221	88	06903	75	31793	30
21 0	05593	48	61811	12	51333	87	10478	76	28715	20
10	09342	48	55899	11	41445	88	14454	76	25644	10
20	13091	48	49987	10	31557	86	18430	77	22570	0 40
30	16840	48	44076	09	21670	87	2240	77	19496	30
40	20588	49	38165	08	11782	86	26385	76	16421	20
50	24337	48	32255	07	01896	87	30359	77	13346	10
22 0	28085	47	26345	06	19792009	86	34336	78	10271	0 38
10	31833	47	20436	05	82122	80	38324	78	07196	30
20	35581	47	14528	04	72236	87	42302	79	04121	20
30	39328	47	08620	03	62349	86	46271	79	01045	10
40	43076	47	02713	02	52463	85	50250	77	97970	0 37
50	46823	47	45496806	01	42577	85	54224	78	94894	30
23 0	50571	46	90900	00	32691	85	58209	80	91818	20
10	54318	46	84995	99	22806	85	62180	81	88741	10
20	58065	46	79090	98	12920	84	66170	81	85665	0 40
30	61812	46	73186	97	03035	85	70151	82	82588	30
40	65558	46	67282	96	1969315	84	74130	82	79512	20
50	69305	46	61379	95	83266	85	78111	82	76439	10
60	73051	46	55476	94	73381	85	82095	82	73358	0 36

Grad. 40.

S. M.

Grad. 39.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
24 0	63473051	47	45455476	01	19673381	85	25782078	03	77273358	10
10	76798	46	49574		63496	84	86078		70280	50
20	80544		43673	00	53612	85	90061	84	67202	10
30	84290	45	37772		41727	83	94045	84	64125	77
40	88035	46	31872	00	33844	83	98028	83	61047	10
50	91781		25972	99	23960	84	25802012	84	57969	10
25 0	95527	3745	20073	97	14077	80	05996	85	54890	035
10	99272		14175		04194	81	09981		51812	50
20	63503017		08277	96	19594551	82	13966	86	48733	40
30	06762	44	02380		84428	83	17952	87	45655	30
40	10507	45	45396483	96	74545	82	21938		42576	20
50	14252	44	90587	95	64663	83	25924	87	39497	10
26 0	17096	45	84691	95	54780	82	29911	87	36417	034
10	21741	44	78796	94	44898		33898	88	33338	50
20	25485		72902		35016		37886		30218	40
30	29229		67008	93	25134		41874	89	27178	30
40	32973		61115		15252		45863		24098	20
50	36717		55222	92	05370	81	49852		21018	10
27 0	40461	43	49330	91	19495489		53841	90	17937	033
10	44104	44	43439		85608		57831		14857	50
20	47948	43	37548	90	75727	80	61821		11776	40
30	51691		31658		65847	81	65811	91	08695	30
40	55434		25768	89	55986	80	69802		05614	20
50	59177		19875	88	46086		73793		02532	10
28 0	62920		13991		36206		77785	92	77199451	032
10	66663	42	08103		26326		81777		96369	50
20	70405	41	02215		16446		85769	93	93287	40
30	74148	41	45296328	87	06566		89762		90205	30
40	77890	42	90442	86	19396687	79	93755		87123	20
50	81632		84557	85	86808		97748	94	84040	10
29 0	85374	41	78671	84	76929		25901742		80958	031
10	89115	42	72787		67051	78	05736		77875	50
20	92857		66903		57172	79	09731	95	74792	40
30	96599		61020	83	47294	78	13726		71709	30
40	63600340	41	55137		37415	79	17722	96	68626	20
50	04081		49255	82	27537	78	21718		65542	10
60	07822		43373		17619		25714		62458	030

Grad. 40.

15.M.

Dad 3

Grad. 39.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
30 0	53007822		45243373	81	19317659	78	25925714	77	77162458	60
10	11561	4	37492	81	97781	78	29711	77	59374	50
20	15304	40	31612	80	19297904	9877	31708	77	56390	40
30	19044	41	25732	79	88047	9877	37705	98	53106	30
40	22785	42	19853	78	78150	9877	41703	98	50122	20
50	26525	43	13974	78	68273	9877	45701	99	47037	10
60	30265	44	08095	77	58396	76	49700	99	43952	029
70	34005	45	02215	77	48520	76	53699	99	40867	50
80	37745	46	45156342	76	38644	76	57693	99	37782	40
90	41485	47	90466	76	28768	75	61698	99	34697	30
100	45224	48	84590	75	18892	75	65698	99	31611	20
110	48963	49	78715	74	09016	75	69699	99	28526	10
120	52703	38	72841	74	19199141	75	73700	99	25440	028
130	56442	39	66967	73	89166	75	77701	99	22354	50
140	60181	38	61094	73	79391	75	81703	99	19267	40
150	63919	38	55221	72	69516	75	85705	99	16181	30
160	67658	38	49349	72	59641	75	89708	99	13094	20
170	71396	39	43477	71	49766	74	93711	99	10008	10
180	75135	38	37606	70	39892	74	97714	99	06921	027
190	78873	38	31736	70	30018	74	1001718	99	03834	50
200	82611	38	25866	69	20144	73	05721	99	00746	40
210	86349	37	19995	68	10271	73	09726	99	77097659	30
220	90087	37	14128	68	00397	74	13731	99	94571	20
230	93824	37	08260	68	19090514	73	17736	99	91483	10
240	97562	38	02390	67	80650	74	21742	99	88395	026
250	63701299	37	45096525	67	70777	73	25748	99	85397	50
260	05036	37	90658	66	60903	74	29753	99	82218	40
270	08773	36	84792	65	51030	73	33761	99	79130	30
280	12510	36	78927	65	41158	72	37769	99	76041	20
290	16246	36	73062	64	31285	73	41777	99	72952	10
300	19983	37	67198	63	21413	72	45785	99	69863	025
310	23719	36	61333	63	11541	71	49794	99	66774	50
320	27456	37	55472	62	01669	71	53803	99	63684	40
330	31192	36	49610	62	18991798	71	57812	99	60594	30
340	34928	35	43748	61	81926	72	61822	99	57505	20
350	38663	36	37886	61	72054	72	65831	99	54415	10
360	42399	36	32023	61	62182	71	69843	99	51324	024

Grad. 40.

S. A.

Grad. 39.

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M.S	Sin.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinu.	D.	
36 °	5374399	35	4503202	60	18962182	71	26069843	11	77051324	90	60
10	46134	35	26165	60	53311	70	73854	11	48234	91	50
20	49870	36	26506	100	41441	9871	77865	12	45143	90	40
30	53605	37	14447	100	32570	871	81877	12	42093	91	30
40	57340	37	08588	100	22699	871	85889	12	38962	91	20
50	61075	38	02730	100	12828	871	89901	13	35870	92	10
										91	023
37 °	64810	34	44926872	57	02957	70	93915	13	32779	91	50
10	68544	35	91015	56	18893087	70	97918	14	29688	90	40
20	72279	34	85159	55	83217	69	26101942	14	26596	90	30
30	76013		79304		73348	70	05956	15	23504	91	20
40	79747		73449	54	63478	69	09971	15	20412	91	10
50	83481		67595		53609		13986		17320	93	00
										92	022
38 °	87215		61741	53	43740		18001	16	14227	91	50
10	90949	33	55888	52	33871	68	22017	16	11135	93	40
20	94682		50036		24003		26033		08041		30
30	98415	34	44184		14135	69	30049	17	04949	90	20
40	63802149	33	38332	51	04266	68	34066	17	01856	91	10
50	05882		32481	50	18794398		38083	18	76998763	94	00
										93	021
39 °	09615	32	26631		84550		42101		95669	93	50
10	13347		20781	49	74662	67	46119		92576	94	40
20	17076	33	14932	48	64795	67	50137	19	89482	95	30
30	20813	32	09084		54928		54156		86388	95	20
40	24545		03236	47	45061		58175	20	83293	94	10
50	28277		44897389		35194		62195		80199	95	00
										94	020
40 °	32009		91541	46	25227	66	66215		77104	94	50
10	35741		85696	45	15461		70235	21	74010	95	40
20	39473	31	79851		05595		74256		70915		30
30	43204	32	74006		18695729	67	78277	22	67820	96	20
40	46936	31	68161	4	85862	66	82299	22	64724	95	10
50	50667	31	62317	4	75996	67	86321	23	61629	96	00
											019
41 °	54398		56473	42	66125	66	90344		58533	90	50
10	58129		50630	41	56263		94367	24	55437	91	40
20	61860	40	44788		46397	65	98391	23	52341		30
30	65590	31	38946	4	36532		16102414	24	49245	97	20
40	69321	31	33105	4	26667	64	06218		46149	97	10
50	73052	30	27265	40	16803	65	10462	25	43052	96	018
60	76782		21425		06938		14487		39956		

Grad. 50.

S.M.

Grad. 39.

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M. S.	Sinus.	D.	Logarith.	D.	Difference.	D.	Logarith.	D.	Sinus.	D.
42 0	63876781	2	44821415	39	18606938	64	16214487	25	76939956	60
10	80512	2	15586	39	18597074	65	18512	25	36859	50
20	84242	0	09747	38	87209	65	12538	25	33761	40
30	87971	29	03909	37	77345	906	16564	27	30664	30
40	91701	30	44792071	37	67481	+	30590	27	27567	20
50	95431	29	92234	36	57617	+	34617	27	24469	10
+	99160	29	86397	36	47753	63	38644	28	21371	017
10	63902889	28	80561	35	37889	63	42672	28	18273	50
20	06618	28	74726	35	28026	63	46700	29	15175	40
30	10347	28	68892	34	18163	63	50729	29	12077	30
40	14076	28	63058	34	08301	63	54757	28	08978	20
50	17804	29	57224	33	18498438	61	58786	29	05875	10
44 0	21533	28	51391	32	88576	61	62815	30	02780	016
10	25261	28	45559	32	78714	61	66845	30	76899681	50
20	28989	27	39727	31	68852	61	70875	31	96582	40
30	32717	27	33896	30	58990	61	74906	31	93453	30
40	36445	27	28065	30	49128	61	78937	32	90383	20
50	40173	27	22235	29	39266	61	82969	32	87233	10
45 0	43900	28	16405	29	29404	61	87001	33	84183	015
10	47618	27	10576	28	19543	62	91033	33	81081	50
20	51355	27	04747	28	09681	61	95066	33	77983	40
30	55082	26	44698919	27	18399820	60	99099	34	74882	30
40	58809	26	92092	26	89959	60	16303133	34	71781	20
50	62536	26	87265	26	80098	60	07167	35	68680	10
46 0	66262	27	81439	25	70238	60	11201	35	65579	014
10	69989	26	75614	24	60378	59	15236	36	62478	50
20	73715	26	69789	24	50518	59	19271	36	59377	40
30	77441	25	63965	23	40656	59	23307	37	56275	30
40	81167	25	58141	23	30798	59	27343	37	53173	20
50	84893	25	52318	22	20939	60	31379	38	50071	10
47 0	88619	25	46495	22	11079	59	35416	38	46969	013
10	92344	25	40673	21	01220	59	39453	39	43867	50
20	96070	25	34851	21	18291360	60	43491	39	40764	40
30	99795	25	29030	20	81501	58	47519	40	37661	30
40	1003510	25	23210	19	71643	59	51567	40	34559	20
50	07245	25	17350	18	61784	58	55606	41	31456	10
60	10970	25	11571	17	51926	58	59645	42	28352	012

Grad. 40.

15.44.

Grad. 39.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48 °	64010970	15	44611571	19	18251926	59	26359645	40	76828352	60
10	14695	25	05751	19	41067	59	63685	40	25149	03
20	18419	24	44599934	18	32209	60	67735	40	22145	04
30	22144	25	94116	17	21351	58	71765	41	19042	03
40	25868	24	88299	16	11493	57	75806	41	15938	02
50	29592	23	82483	15	01636	58	79847	42	12833	05
49 °	33316	23	76667	15	18192778	57	83885	42	09729	04
10	37039	24	70852	14	81911	57	87931	43	06624	05
20	40763	23	65037	14	73064	58	91973	44	03510	04
30	44487	23	59223	13	63207	56	96016	45	00415	03
40	48210	22	53409	12	53350	55	100059	46	7697310	02
50	51933	21	47596	11	43493	54	04101	47	94205	01
50 °	55656	21	41783	11	33636	56	08147	48	91099	00
10	59379	22	35971	10	23780	55	12191	49	87994	05
20	63102	23	30160	09	13924	54	16236	50	84888	06
30	66824	24	24349	08	04068	53	20281	51	81782	07
40	70547	25	18539	07	18094212	52	24327	52	78676	08
50	74269	26	12730	06	84357	51	28373	53	75570	09
51 °	77991	27	06921	05	74502	50	32419	54	72463	10
10	81713	28	01113	04	64647	49	36466	55	69356	09
20	85435	29	44495306	03	54793	48	40512	56	66249	08
30	89156	30	39499	02	44939	47	44560	57	63142	07
40	92878	31	33692	01	35084	46	48608	58	60035	06
50	96599	32	77886	00	25230	45	52656	59	56928	05
52 °	64100310	33	72080	00	15375	44	56705	60	53820	04
10	04041	34	66275	00	05521	43	60754	61	50712	03
20	07762	35	60471	00	17995668	42	64803	62	47604	02
30	11483	36	54667	00	85814	41	68853	63	44496	01
40	15204	37	48864	00	75961	40	72903	64	41388	00
50	18924	38	43062	00	66108	39	76954	65	38280	00
53 °	22645	39	37260	00	56255	38	81005	66	35171	00
10	26365	40	31459	00	46403	37	85056	67	32062	00
20	30085	41	25658	00	36550	36	89108	68	28953	00
30	33805	42	19858	00	26698	35	93160	69	25844	00
40	37524	43	14058	00	16845	34	97213	70	22734	00
50	41244	44	08259	00	06993	33	10501266	71	19625	00
60	44963	45	02460	00	17897141	32	05319	72	16515	00

Grad. 40.

S.M.

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Grad. 39.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54 ⁰	64144963	3719	44402460	98	17897141	52	26505319	54	76716515	60
10	48682		44396662	97	87289	51	09373		13405	50
20	51401		90865		77438	51	13427		10395	40
30	56120		85088		67586	51	17421	4055	07185	30
40	59839		79272	96	57715		21537		04074	20
50	63558		73476	95	47884	9811	25592		00964	10
55 ⁰	67276	18	67681	95	38033		29648	56	76697853	0
10	70995	19	61886	94	28182	50	33704	57	94742	50
20	74713	18	56092	93	18331		37761		91631	40
30	78431		50299	93	08421		41818		88519	30
40	82149		44506	92	17798631		45875		85408	20
50	85867		38714	92	88781		49933	58	82296	10
56 ⁰	89584	17	32922	91	78931		53991	59	79184	0
10	93302	18	27131	91	69081		58050		76072	50
20	97019	17	21340	90	59231	49	62109		72960	40
30	64100736		15550	89	49382		66168	60	69847	30
40	04453		09761		39533		70228		66735	20
50	08170		03972	88	29684		74288	61	63622	10
57 ⁰	11887	16	44298184	87	19835	48	78349		60505	0
10	15603	17	92396	86	09986		82410		57396	50
20	19320	16	86609	86	00138	48	86471	62	54282	40
30	23036		80823	85	17690290		90533		51165	30
40	26752		75037	85	80441		94595	63	48055	20
50	30468		69252	84	70594		98658		44941	10
58 ⁰	34183	15	63467	84	60746		26602721	64	41827	0
10	37899	16	57683	84	50898	47	06785		38713	50
20	41615		51900	83	41051	47	10849		35598	40
30	45330	15	46117	83	31203	48	14914		32484	30
40	49045		40334	81	21356	47	18978		29369	20
50	52760		34552	81	11509		23043	65	26254	10
59 ⁰	56475		28770	81	01662		27108	66	23139	0
10	60190	14	22989	81	17591815		31174		20024	50
20	63904	15	17208	80	81968		35240		16908	40
30	67619	14	11428	80	72121	46	39307		13792	30
40	71333		05649	79	62275		43374		10676	20
50	75047		44199870	78	52429		47441		07560	10
60	78761		94092		42583		51509	68	04444	0

Grad. 50.

S.M.

Grad. 40.

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M. S.	Sinn.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinn.	D.
0	64278761	14	44194092	78	17542583	46	36651509	68	76604444	60
10	82475	14	88314	78	32737	46	55577	68	01328	50
10	86182	13	82537	77	22891	45	59646	69	76598211	40
30	89902	12	76761	75	13046	45	63715	70	95094	30
40	93615	12	70985	75	03200	46	67785	70	91977	20
50	97328	13	65210	75	17493355	9845	71855	70	88860	10
1	64301041	12	59435	74	23510	45	75925	71	85743	059
10	04754	12	53661	73	73665	44	79996	71	82626	50
20	08467	11	47887	73	63830	44	84067	71	79508	40
30	12180	11	42174	72	53976	44	88138	71	76390	30
40	15892	12	36342	72	44132	43	92210	71	73272	20
50	19605	12	30570	71	34288	43	96282	73	70154	10
2	23317	11	24799	71	24444	43	16700355	73	67035	15
10	27029	11	19028	70	14600	43	04428	73	63917	058
20	30741	11	13258	69	04757	43	08511	73	60798	50
30	34452	11	07489	68	17394914	42	12575	74	57679	40
40	38164	12	01720	68	85071	42	16649	74	54560	30
50	41875	11	44095952	68	75222	42	20724	75	51441	20
3	45586	11	90184	67	65385	41	24799	76	48121	10
10	49297	10	84417	67	55542	41	28875	76	45102	057
20	53008	10	78650	66	45699	41	32951	77	42082	50
30	56719	10	72884	66	35856	41	37028	77	38962	40
40	60430	10	67118	65	26014	41	41104	77	35842	30
50	64140	11	61353	65	16172	41	45181	77	32724	20
4	67851	11	55589	64	06331	41	49258	78	29601	10
10	71561	10	49825	63	17296489	42	53336	78	26480	056
20	75271	10	44062	63	86648	41	57414	79	23359	50
30	78981	9	38299	62	76806	41	61492	79	20238	40
40	82691	9	32537	62	66965	41	65572	80	17117	30
50	86400	9	26775	61	57123	41	69652	80	13995	20
5	90110	10	21014	61	47282	41	73732	81	10874	10
10	93819	9	15254	60	37441	41	77813	81	07752	055
20	97528	9	09494	59	27600	40	81894	82	04630	50
30	64401237	8	03735	58	17760	40	85975	82	01508	40
40	04946	8	43997976	58	07919	39	90057	82	76498385	30
50	08654	9	92218	57	17198080	39	94138	82	95263	20
60	12363	9	86460	57	88240	40	98220	82	92140	10

Grad. 49.

S.M.

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Grad. 40.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6 0	64412363	3708	43986460	5757	17188240	40	26798220	4083	76492140	60
10	76071		80703	5757	78400		28802303		89017	50
20	19779		74946	56	68560	9839	06386	84	35894	40
30	23487		69190	55	58721		10469	85	21771	30
40	27195		63435	54	48882		14553	86	79647	20
50	30903		57680	53	39043		18637	87	76524	10
7 0	34611	07	51926	52	29204	38	22722	88	73400	053
10	38318	08	46172	51	19365		26807	89	70276	50
20	42026	07	40419	50	09516	37	30893	90	67152	40
30	45733		34666	49	17099687	36	34979	91	64028	30
40	49440		28914	48	89849	35	39065	92	60903	20
50	53147	06	23163	47	80011	34	43152	93	57778	10
8 0	56853	07	17412	46	70173	33	47239	94	54653	052
10	60560	06	11662	45	60335	32	51327	95	51528	50
20	64266	05	05912	44	50497	31	55413	96	48403	40
30	67973	04	00163	43	40659	30	59504	97	45278	30
40	71679	03	43894414	42	30822	29	63592	98	42152	20
50	75385	02	88666	41	20985	28	67681	99	39026	10
9 0	79090	01	82919	40	11149	27	71770	00	35900	051
10	82796	00	77172	39	01312	26	75860	01	32774	50
20	86502	00	71426	38	16991476	25	79950	02	29648	40
30	90207	00	65680	37	81639	24	84041	03	26522	30
40	93912	00	59935	36	71803	23	88132	04	23395	20
50	97617	00	54190	35	61966	22	92224	05	20268	10
10 0	64501322	04	48446	34	52130	21	96316	06	17141	050
10	05027	03	42703	33	42195	20	26900408	07	14014	50
20	08731	02	36960	32	32459	19	04501	08	10887	40
30	12436	01	31218	31	22624	18	08594	09	07759	30
40	16140	00	25476	30	12788	17	12688	10	04631	20
50	19844	00	19735	29	02953	16	16782	11	01503	10
11 0	23548	00	13994	28	16893118	15	20876	12	74398375	049
10	27252	00	08254	27	83283	14	24971	13	95247	39
20	30956	00	02514	26	73448	13	29066	14	92113	29
30	34659	03	43796775	25	63613	12	33162	15	88990	19
40	38362	04	91037	24	53779	11	37258	16	85861	9
50	42066	03	85299	23	43945	10	41354	17	82732	0
60	45769	02	79562	22	34111	9	45451	18	79603	048

Grad. 49.

[S.M.]

Grad. 40.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
12 0	64545769	03	43779562	37	16834111	9834	26945451	97	76379603	29	60
10	49472	01	73825	37	24277		49548	97	76474	29	50
20	53174	01	68089	37	14443		53646	97	73344	3130	40
30	56877	03	62353	37	04609		57744	99	70214	3130	30
40	60579	02	56618	34	16794776	33	61842	99	67084	20	20
50	64281	03	50884	34	84943		65941	99	63954	10	10
13 0	67984	02	45150	33	75110		70040	97	60824	047	
10	71686	01	39417	33	65277		74140	97	57694	50	
20	75388	01	33684	32	55444		78240	97	54563	31	40
30	79089	02	27952	32	45612	32	82340	97	51432	30	
40	82791	01	22220	31	35779	33	86441	01	48301	20	
50	86492	02	16489	30	25947	31	90542	97	45170	10	
14 0	90194	01	10759	30	16116	32	94643	97	42039	32	046
10	93895	01	05029	29	06284	31	98745	01	38907	31	50
20	97596	01	4369300	29	16696453	32	27002847	97	35776	31	40
30	64601296	01	93571	28	86621	31	06950	03	31644	31	30
40	04997	01	81843	28	76790	32	11053	97	29512	33	20
50	08698	01	82115	27	66958	31	15157	04	26379	32	10
15 0	12398	3700	76388	27	57127	32	19261	97	23247	33	045
10	16098		70661	26	47295	31	23366	05	20114	33	50
20	19798		64935	25	37464	30	27471	06	16982	32	40
30	23498		59210	24	27633	30	31577	06	13849	33	30
40	27198		53485	24	17803	29	35682	05	10716	34	20
50	30856		47761	24	07973	29	39788	06	07582	33	10
16 0	34597	2609	42037	23	16598143		43894	07	04449	34	044
10	38297		36314	23	88313		48001	07	01315	34	50
20	41995		30591	22	78483		52108	08	76298181	34	40
30	45694		24869	22	68653		56216	08	95047	35	30
40	49393		19147	21	58823	29	60324	09	91913	35	20
50	53092		13426	20	48994		64432	09	88779	35	10
17 0	56790	98	07706	20	39165		68541	09	85644	35	043
10	60488	99	91986	19	29336		72650	10	82509	35	50
20	64187	99	43590267	19	19507		76760	10	79374	35	40
30	67885	98	91548	18	09678		80870	11	76239	36	30
40	71583	97	81830	17	16499849	28	84981		73104	36	20
50	75280	98	77113	17	90021		89092		69969	36	10
60	78978	98	73396		80193		93203		66833	36	042

Grad. 49.

S.M.

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Grad. 40.

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M. S.	Sinns.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinns.	D.
18 0	54678978	97	43573396	16	16480193	9828	27093203	12	76166833	60
10	82675	97	67680		70365		97315		63697	50
20	86373	98	41964		60537		17101427		60561	40
30	90070	3697	56249	15	50709		05540	115	57435	30
40	93767		50534		40881		09653		54289	20
50	97464		44819		31053		13760		51152	10
19 0	64701160	96	39105	14	21125	27	17880	14	48015	04
10	04857	97	33392	13	11398		21994		44878	50
20	08553	96	27680	12	02571		26109	15	41741	40
30	12249		21968		16391744	26	30324		38604	30
40	15945		16257	11	81918		34339		35467	20
50	19641		10546		72091	17	38455	16	32329	10
20 0	23337		04835	10	62264		42571		29191	040
10	27033	95	43499125	09	52437	26	46688	17	26053	50
20	30728	96	93416		41611		50805		22915	40
30	34414	95	87707	08	32784	17	54923	18	19777	30
40	38119		81999		22959	25	59040	17	16658	20
50	41814		76292	07	13134		63158	18	13500	10
21 0	45505	94	70585	06	03309		67276		10361	39
10	49203	95	64879		16293484		71395	19	07222	50
20	52898	94	19173	05	23659		75514	20	04083	40
30	56592		53468		73834		79634		00943	30
40	60286		47763		64009		83754	11	76197804	20
50	63981	95	42059	04	54184		87875		94664	10
22 0	67675	94	36355		44359		91896	12	91524	038
10	71368	93	30652	03	34534		96118		88384	50
20	75062	94	24949		24709	27	100340	13	85244	40
30	78755		19247	01	14884		04363	12	82103	41
40	82445	94	13546		05061	23	08485	13	78962	30
50	86143	93	07845		16195337	14	12608	23	75821	20
23 0	89835		02145	00	85414	23	16731		73680	10
10	93528		43396446	5600	75591		20855	14	69539	039
20	97221		90747	98	65768		24979	15	66398	50
30	64800973	94	85049		55945		29104		63056	41
40	64606	93	79351		46222		33219		60155	41
50	68208	92	73853		36299		37354	16	56973	41
60	71990		67956	97	26476		41480		51831	036

Grad. 50.

J.M.

Grad. 40.

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M. S.	Sinns.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinns.	D.
24 0	64811990		43367956		16126476		57241480		76153831	60
10	15681		61260		16654		45606		50688	30
20	19374		96564		06831		49733		47546	40
30	23066		30869		2697009		53860		44403	30
40	26757		45174		87187		57987		41261	20
50	30448		39480		72365		62155		38118	10
25 0	34140		33787		67544		66243		34974	0 35
10	37831		28095		57723		70372		31831	50
20	41521		22403		47902		74501		28688	40
30	45211		16711		38081		78630		25544	30
40	48903		11020		28160		82760		22400	20
50	52593		05319		18439		86890		19256	10
26 0	56284		43299639		08618		91021		16113	0 34
10	59974		93950		15998798		95151		12967	50
20	63664		88261		88977		17309284		09823	40
30	67354		82573		79157		03416		06678	30
40	71043		76885		69337		07548		03533	20
50	74733		71198		59517		11681		00388	10
27 0	78422		65511		49697		15814		76097245	0 33
10	82111		59825		39877		19948		94097	50
20	85800		54140		30058		24081		90951	40
30	89489		48455		20239		28216		87806	30
40	93178		42770		10419		32351		84660	20
50	96867		37086		00600		36486		81513	10
28 0	64900555		31402		15890780		40622		78367	0 32
10	04244		25719		80981		44758		75220	50
20	07932		20037		71142		48895		71074	40
30	11620		14355		61333		53032		68927	30
40	15308		08674		51505		57169		65780	20
50	18995		02993		41686		61307		62632	10
29 0	22683		43197113		31868		65445		59485	0 31
10	26370		91633		22049		69584		56337	50
20	30057		85954		12231		73723		53190	40
30	33744		80276		02413		77863		50042	30
40	37431		74598		15792596		82002		46893	20
50	41118		68921		82729		86141		43745	10
30	44805		63244		72962		90282		40597	0 30

Grad. 49.

S.M.

Grad. 40.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
30 0	6494805	86	43163244	5676	15772963	17	27390282	41	76040597	60
10	48491		57568		63145		94423		37448	50
20	52178	87	51892		53328		98564		34299	40
30	55864	3686	46217		43511	9017	17402706	42	31150	30
40	59550		40542	74	33694		06848		28001	20
50	63236		34868	73	23877	16	10991	443	24851	10
31 0	66921	85	39195		14061		15134		21702	029
10	70607	36	23522	72	04245		19277		18552	50
20	74292	85	17850		15694429		23421	44	15402	40
30	77978	86	-12178		84613		27565		12252	30
40	81663	85	06507	71	74797		31710	45	09101	20
50	85348		00836	70	64981	15	35855		05951	10
32 0	89032	84	43095166		55166		40000		01800	028
10	92717	85	89497	69	45351		44146	46	75999649	50
20	96402		83828	68	35536		48292		96498	40
30	65000086	84	78160		25721		52439	47	93347	30
40	03770		72492		15906		56586		90196	20
50	07454		66825	67	06092	14	60733		87044	10
33 0	11138		61158		15596277	15	64881	48	83893	027
10	14822	83	55492	66	86463	14	69029		80741	50
20	18505	84	49826		76648	15	73178	49	77589	40
30	22189	83	44161	65	66834	14	77327		74436	30
40	25872		38496	64	57019	15	81477	50	71284	20
50	29555		32832	64	47105	14	85627		68131	10
34 0	33238		27169	63	37392	13	89777		64978	026
10	36921		21506		27578	14	93928	51	61825	50
20	40604	82	15844	62	17765	13	98079		58672	40
30	44286		10182	61	07952	12	27502230		55519	30
40	47968	83	04521		15498140	13	06382	52	52365	20
50	51651	82	42998860	60	88327		10534		49212	10
35 0	55333		93200	59	78514	12	14687	53	46058	025
10	59015	81	87541		68702		18840		42904	50
20	62696	82	81882	58	58889	13	22994	54	39749	40
30	66378	81	76224		49077	12	27148		36595	30
40	70059	82	70566		39265		31302		33440	20
50	73741	81	64909	57	29453		35457	55	30286	10
60	77422		59252		19641		39612		27131	024

Grad. 49.

S.M.

Grad. 40.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
36	65077422	81	42959253	56	15419640	9812	27319612	56	75927131	55	60
10	81103		53396		09828		41768		23976	56	50
20	84783	80	47940	55	00016		47924	57	20820		40
30	88464	81	42285	54	15390104	10	52081	56	17665	55	30
40	92145		36631		80394	11	56137	57	14509		20
50	95825	3680	30977	53	70583	10	60394		11353		10
37	99505		25324		60773	11	64551	58	08197		023
10	65103185		19671	52	50962	10	68705		05041		0
20	06865		14019		41152	11	72867	59	01885	57	40
30	10545		08367	51	31341	11	77020		5848728		30
40	14225	75	02746		21531	11	81185		95571		20
50	17904		42897065	50	11720	10	85341		92414		10
38	21583		91415	49	01910		89503	61	89157		022
10	25262		85766		15292100		93660		86100		50
20	28941		80117	5648	82290		9782	61	82943	58	40
30	32620		74469		71480	09	17601985	61	79785		30
40	36299		68821		61671	10	06150	62	76627		20
50	39977	78	63173	47	52861	09	10312		73469		10
39	43656	75	57526	46	43052		14474	63	70311		021
10	47334	78	51880		33243		18637		67153	59	50
20	51012		46234	45	23434		22800	64	63994		40
30	54690		40589		13627		26964		60835	58	30
40	58368		34944	44	03816	08	31128	65	57677		20
50	62045	77	29300	43	15194007		35293	66	54518	59	10
40	65723	77	23657	42	84199		39458		51358		020
10	69400		18014		74391		43623		48199	55	50
20	73077		12372	41	64583		47789	66	45035	60	40
30	76754		06730		54775		51955		41880	59	30
40	80431		01089	40	44967		56122	67	38720		20
50	84108	76	42795448	39	35159	07	60285		35555	61	10
41	87784	77	89808	38	25352		64450		32394		019
10	91461	76	84169		15545		68624		29335	61	50
20	95137		78530	37	05738		72792	69	26072		40
30	98813		72892		15095931		76961		22917		30
40	65201485		67254		86124	06	81130		19750		20
50	0616	75	61617	37	76318	07	85299		16595		10
60	09840		55980		66511		89409	70	13434		018

Grad. 49.

S.M.

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Grad. 40.

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M. S.	Sinus.	D.	Logarith.	D. Different.	D.	Logarith.	D.	Sinus.	D.
42 0	69209840	76	42755980	15066511	06	27689469	70	75813434	60
10	13516		50344	56705	06	93639	70	10272	50
20	17191	1675	44708	46898	07	97810	71	07110	40
30	20866		39073	37092	06	27701981	4172	03948	30
40	24541		33438	27285	07	06153		00786	20
50	28216		17804	17479	06	10325		5797624	10
43 0	31891	74	12171	07674	05	14497	3	94461	017
10	35565	75	16538	14997868	06	18670		91199	63
20	39240	75	10906	88061	05	22843		88130	40
30	42914	74	05274	78258	05	27016	74	84975	30
40	46588		42699643	65453		31190		81810	20
50	50262		94012	58648		35364	75	78647	10
44 0	53936	73	88382	48843	04	39539	75	75483	016
10	57609	74	82753	39039	05	43714	76	72319	50
20	61283	73	77124	29234	04	47890		69156	40
30	64956		71496	19430	04	52066		65992	30
40	68629		65868	09616	05	56241	77	62827	20
50	72302		60240	14899821	04	60419		59663	10
45 0	75975		54613	90017	04	64596	71	56498	015
10	79648	72	48987	80113	03	68774		53334	50
20	83320	73	43361	70409	03	72952		50160	40
30	86993	71	37736	60606	04	77130	79	47004	30
40	90665		32111	50802	03	81309		43838	20
50	94337		26487	40999	03	85488	80	40673	10
46 0	98009		20864	31196		89668		37507	014
10	65301681	71	15241	21393		93848	81	34341	50
20	05352	72	09619	11590		98019		31175	40
30	09024	71	03997	01787	02	27802210		28009	30
40	12695		42598376	14791985	03	06391	82	24843	20
50	16366		92755	82182	02	10573		21676	10
47 0	20037		87135	72380	03	14755	83	18510	013
10	23708		81515	62577	01	18938		15343	50
20	27379		75896	52775	03	23121	84	12176	40
30	31050	70	70277	42972	01	27305	83	09008	30
40	34720		64659	33171		31488	84	05841	20
50	38390		59042	23370		35672		02673	10
60	42060		53425	13569		39856		75699505	012

Grad. 49.

J. A.

Grad. 40.

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D. Logarith.	D.	Sinus.	D.
48 0	65341060		42553425		14713569	981	27839856	75699505	67 60
10	45730	1670	47809	1616	03768		44041	96338	67 50
20	49400		42193		14693967		48226	93170	68 40
30	53970		3578		84166		52412	90001	68 30
40	56739	69	30963		74365		56698	86813	68 20
50	60409	70	25349	14	64564		60785	83664	68 10
		69							68 00
49 0	64078		19735		54763		64972	80495	67 50
10	67747		14122	13	44962		69160	77326	67 40
20	71416	68	08509	12	35161		73348	74157	67 30
30	75084	69	01897	11	25360	99	77537	70587	67 20
40	78753	68	41477286		15561	00	81725	67818	67 10
50	82421		91675	10	05761	95	85914	64648	67 00
		69							66 50
50 0	86089		86065		14595962		90103	61478	66 40
10	89757		80455		86162	95	94193	58308	66 30
20	93425		74846	09	76363	00	98483	55138	66 20
30	97093		69237	08	66563	9799	17902674	51967	66 10
40	65400761	67	63629	07	56764		06865	48797	66 00
50	04428	68	58022		46965		11057	45626	65 50
		69							65 40
51 0	08096		52415		37166		15245	41455	65 30
10	11763		46809	06	27367		19442	39284	65 20
20	15430		41203	05	17568	98	23635	36112	65 10
30	19097		35598		07770		27828	32941	65 00
40	22762	67	29893		14497972		32021	29764	64 50
50	26430	68	24389	04	88174		36215	26597	64 40
		69							64 30
52 0	30096		18785		78376		40405	23423	64 20
10	33763	66	13182	03	68578		44604	20255	64 10
20	37429		07579	02	58780		48799	17081	64 00
30	41095		01977		48982		52995	13908	63 50
40	44761	65	42396375		39184	97	5719	10731	63 40
50	48426	66	90774	01	29387		61387	0756	63 30
		67		00					63 20
53 0	5209		85174		19590		65984	0438	63 10
10	5575		75574		05793		69781	01326	63 00
20	59422		73975		14399956		73979	75598041	62 50
30	63087		68376		90299		78177	9486	62 40
40	66753		62778	58	80402		82376	91695	62 30
50	70415		57180		70605	96	86575	88521	62 20
60	74081	64	51583	57	60809		90774	85347	62 10

Grad. 49.

S.M.

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Grad. 40.

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M. S.	Sinus.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus.	D.
54 °	65474081	65	42351583	96	14360804	9796	27990774	00	75585347	66
10	77746		45987		51013		94974	00	82172	75
20	81410	3664	40391		41217		99174	401	78998	74
30	85074		34796	59	31421		28003375	01	75823	30
40	88738		29201	50	21625		07576	01	72648	20
50	91402		23606	94	11829		11777	02	69473	10
55 °	96065	63	18012	93	02033	95	15979		66298	05
10	99729	64	12419	93	14292238	96	20181		63123	76
20	65503332	53	06826	92	82442	95	24384	03	59947	40
30	07055		01234		71647	96	28587		56771	30
40	10718		42295642	91	62851	95	32791	04	53595	20
50	14381		90051		53056		36995		50419	10
56 °	18044		84460	90	43261		41199	05	47243	04
10	21707		78870	89	33466	94	45404		44066	76
20	25369	2	73281		23672	95	49609	06	40890	40
30	29031		67692		13877		53815		37713	77
40	32693		62103		04082	94	58021		34530	30
50	36355		56515	88	14194288		62227	07	31355	20
57 °	40017		50928	87	84494		66434		28181	10
10	43679	61	45341	86	74700		70641	08	25004	75
20	47340		39755		64906		74849		21826	78
30	51001	61	34169	85	55112		79057	09	18648	40
40	54663	61	28584		45318		83266		15470	30
50	58324	60	22999	84	35524	93	87475	10	12292	20
58 °	61984	61	17415	83	25731		91684		09113	10
10	65645		11832		15938		95894		05934	79
20	69306	60	06249	82	06145	92	28100104	11	02756	78
30	72966		00667		14096353	93	04314		75499577	79
40	76626		42195085	81	86560	92	08525		96398	30
50	80286		89504		76768	93	12736	12	93218	80
59 °	83946		83923	80	66975	92	16948		90039	79
10	87606		78343		57183	93	21160		86859	80
20	91266	59	72763	75	47390	92	25373	13	83679	50
30	94925	60	67184	78	37598	91	29586		80499	40
40	98585	59	61606		27807	92	33799		77319	30
50	65602244		56028	77	18015	91	38013	14	74139	20
60	05903		50451		08224		42227		70958	10

Grad. 49.

J. M.

Grad. 41.

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M. S.	Sinus.	D.	Logarith.	D.	Differens.	D.	Logarith.	D.	Sinus.	D.
0	65605903	59	41150451	77	14008224	92	28142217	16	75470958	60
10	09562	58	44874	76	13998432	91	46442	15	67777	50
20	13220	57	39298	75	88641	90	50657	14	64596	40
30	16879	56	33722	74	78850	89	54872	13	61415	30
40	20537	55	28147	73	69059	88	59088	12	58234	20
50	24196	54	22572	72	59268	87	63304	11	55052	10
1	27854	53	16998	71	49477	86	67521	10	51871	059
10	31512	52	11424	70	39686	85	71738	9	48689	50
20	35169	51	05851	69	29895	84	75956	8	45507	40
30	38827	50	00279	68	20105	83	80174	7	42325	30
40	42484	49	2094707	67	10315	82	84392	6	39142	20
50	46142	48	89136	66	00525	81	88611	5	35960	10
2	49799	47	83565	65	13890735	80	92830	4	32777	058
10	53456	46	77995	64	80945	79	97050	3	29594	50
20	57113	45	72425	63	71155	78	10201270	2	26411	40
30	60769	44	66856	62	61365	77	05491	1	23228	30
40	64426	43	61287	61	51576	76	09711	0	20045	20
50	68082	42	55715	60	41787	75	13932	0	16861	10
3	71739	41	50151	59	31998	74	18153	0	13677	057
10	75395	40	44584	58	22209	73	22375	0	10493	50
20	79051	39	39017	57	12420	72	26597	0	07309	40
30	82706	38	33451	56	02631	71	30820	0	04125	30
40	86362	37	27886	55	13792843	70	35043	0	00940	20
50	90018	36	22321	54	83054	69	39267	0	75397756	10
4	93673	35	16755	53	73266	68	43491	0	94571	056
10	97328	34	11195	52	63477	67	47716	0	91386	50
20	65700983	33	05630	51	53689	66	51941	0	88101	40
30	04638	32	00067	50	43900	65	56167	0	85015	30
40	08293	29	41994505	49	34113	64	60392	0	81830	20
50	11947	28	88944	48	24326	63	64618	0	78644	10
5	15601	27	83383	47	14539	62	68844	0	75458	055
10	19256	26	77821	46	04752	61	73071	0	72272	50
20	22910	25	72263	45	13694965	60	77298	0	69086	40
30	26564	24	66704	44	85178	59	81526	0	65900	30
40	30217	23	61145	43	75391	58	85754	0	62713	20
50	33871	22	55586	42	65603	57	89983	0	59526	10
60	37524	21	50028	41	55816	56	94212	0	56339	054

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S.M.

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A. S.	Sinus.	D.	Logarithm.	D.	Different.	D.	Logarithm.	D.	Sinus.	D.
6	65737524	54	11950028	54	13655816	87	28294112	410	75356339	60
10	41178	54	44471	54	46019	87	98442	31	53152	50
20	44831	365	38914	56	36142	86	28301672	31	49965	40
30	48484	52	33358	56	26456	87	06902	31	46777	30
40	52137	52	27802	55	16669	86	11333	31	43590	20
50	55789	53	22247	55	06883	87	15364	32	40401	10
60	59442	53	16692	54	13597096	86	19596	32	37214	05
70	63094	53	11138	54	87310	87	23828	33	34025	00
80	66747	52	05584	53	77523	86	28061	33	30837	40
90	70399	51	00031	52	67737	85	32294	34	27649	30
100	74051	51	1894479	51	57952	86	36527	34	24460	20
110	77702	62	88917	51	48166	85	40761	34	21271	10
120	81354	51	83376	50	38381	86	44995	35	18082	05
130	85005	52	77825	50	28595	87	49230	35	14893	00
140	88657	51	72275	49	18810	86	53465	36	11703	40
150	92308	50	66725	48	09025	85	57700	36	08514	30
160	95959	50	61176	48	13499240	84	61936	37	05324	20
170	99610	50	55627	47	89455	84	66172	37	02134	10
180	65803260	51	50079	46	79670	83	70409	38	75298944	05
190	66911	50	44531	46	69885	83	74646	38	95753	00
200	10561	50	38984	45	60101	83	78883	39	92563	40
210	14211	48	33438	44	50317	82	83121	39	89372	30
220	17861	48	27892	43	40533	82	87359	40	86181	20
230	21511	47	22347	42	30749	81	91598	40	82990	10
240	25161	46	16802	41	20965	81	95837	41	79799	05
250	28811	45	11255	40	11181	80	28400077	41	76608	00
260	32460	45	05714	39	01397	79	04317	41	73416	40
270	36109	44	00171	38	13391613	78	08558	42	70224	30
280	39758	44	4179462	37	81830	77	12798	42	67033	20
290	43407	43	89086	36	72047	76	17039	42	63840	10
300	47056	42	83543	35	62265	75	21280	43	60648	05
310	50705	42	78004	34	52482	74	25522	43	57456	00
320	54353	41	72464	33	42700	73	29764	43	54263	40
330	58002	40	66924	32	32917	72	34007	44	51070	30
340	61650	39	61385	31	23135	71	38250	44	47877	20
350	65298	38	55846	30	13352	70	42494	44	44684	10
360	68946	37	50308	29	03570	69	46738	45	41491	05

Grad. 48.

S.M.

Grad. 41.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D	Logarith.	D.	Sinus.	D.
12 0	65868946	48	41750308	38	13303570	920	28446738	44	75241490	60
10	74594	47	44770	37	13293788	920	50982	45	38297	50
20	76441	48	39233	36	84006	920	55227	46	35104	40
30	79889	48	33696	36	74224	81	59472	47	31910	30
40	83536	48	28160	35	64442	81	63718	48	28716	20
50	87183	48	22625	35	54661	81	67964	49	25522	10
13 0	90830	46	17090	34	44880	80	72210	47	22327	94 047
10	94477	46	11556	33	35099	80	76457	48	19133	50
20	98123	46	06022	33	25318	80	80704	49	15938	40
30	65901770	46	00489	32	15537	80	84952	50	12743	30
40	05416	46	+1694936	31	05756	80	89200	51	09548	20
50	05062	46	89424	31	13195926	80	93448	52	06353	10
14 0	12701	45	83892	31	86195	80	97697	53	03157	96 046
10	16354	45	78361	30	76415	80	10446	54	75199962	50
20	20000	45	72830	30	66634	80	06196	55	96766	40
30	23646	45	67300	29	56854	80	14697	56	93570	30
40	27291	45	61770	29	47073	80	18948	57	90374	20
50	30936	45	56241	28	37293	79	23199	58	87177	10
15 0	34581	44	50713	28	27514	80	27451	59	83981	96 045
10	38226	44	45185	27	17734	80	31703	60	80784	50
20	41871	44	39658	27	07955	80	35956	61	77587	40
30	45516	44	34131	26	13098175	79	40209	62	74390	30
40	49160	44	28604	26	88395	79	44463	63	71193	20
50	52805	44	23078	25	78615	79	48717	64	67996	10
16 0	56449	43	17553	25	68836	80	52972	65	64798	98 044
10	60093	43	12028	24	59056	80	57227	66	61600	50
20	63737	43	06504	24	49277	80	61483	67	58402	40
30	67380	43	00980	23	39497	78	65738	68	55204	30
40	71024	43	41595457	22	29719	78	69994	69	52006	20
50	74667	43	89935	21	19941	78	74250	70	48807	10
17 0	78311	43	84413	21	10163	79	78507	71	45609	98 043
10	81954	43	78892	20	00385	79	82764	72	42410	50
20	85597	43	73371	20	12990607	78	87022	73	39211	40
30	89239	43	67851	19	80824	79	91280	74	36011	30
40	92882	43	62331	19	71051	78	95539	75	32813	20
50	96524	43	56811	19	61272	78	99798	76	29613	10
60	66000167	43	51292	19	51494	78		77	26413	0 042

Grad. 49.

S.M.

Grad. 41.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	66000167		41551292		2951494		28599798		75816413	60
10	03809		45774		41716		28604058		23253	50
20	07451		40256		31938		08318		20013	40
30	11093		34739		22160		12579		16813	30
40	14734	41	29222		12383	77	16839		13613	20
50	18376	42	23706		02606		21100		10412	10
19 0	22017	41	18190		12892819		25361		07211	0 41
10	25659	42	12675		83052		24623		04010	50
20	29300	41	07160		73275		33885		00809	40
30	32940	40	01646		63498		38148		5097608	30
40	36581	41	41496133		53721	6	42411		94407	20
50	40222	41	90620		43945	77	46675		91205	10
20 0	43862	40	85108		34165		50934		88003	0 40
10	47503	41	79596		24393		55203		84801	50
20	51143	40	74085		14617		59466		81599	40
30	54783		68574		04841		63733		78357	30
40	58423		63064		12795066	75	67996		75194	20
50	62062	39	57555		85291		72164		71992	10
21 0	65702	40	52046		75516		76530		68785	0 39
10	69341	39	46538		65741		80797		65586	50
20	72980		41030		55966		85064		62382	40
30	76619		35513		46191		89332		59179	30
40	80258		30016		36416		93600		55975	20
50	83897		24509		26640		97869		52772	10
22 0	87536		19003		16865		28702138		49166	0 38
10	91174	38	13498		07090		06408		46364	50
20	94812		07993		12697315		10678		43199	40
30	98450		02489		87540		14949		39955	30
40	66102088		41396985		77766	74	19219		36750	20
50	05726		91482		67992		23490		33545	10
23 0	09364	37	85979		58218		27761		30340	0 37
10	13001	38	80477		48444		32033		27135	50
20	16639	37	74975		38670		36305		23930	40
30	20276		69474		28896		40578		20734	30
40	23913		63973		19122		44851		17519	20
50	27550	36	58473		09548	73	49125		14313	10
60	31186		52974		12599575		53399		11107	0 36

Grad. 48.

S. M.

Grad. 41.

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M. S.	Sinus.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus.	D.
24 0	66131186	37	41352974	99	12599575	74	18753399	75	011107	60
10	34823	36	47475	98	89801	73	57674	74	07901	50
20	38459	37	41977	98	80028	74	61949	76	04694	40
30	42096	36	36479	97	70154	71	66215	75	01488	30
40	45732	35	30982	96	60482	73	70500	75	74998181	20
50	49368	35	25435	96	50709	73	74776	76	95074	10
25 0	53003	36	19989	95	40937	71	79052	77	91867	035
10	56639	36	14493	95	31164	73	83329	77	88660	50
20	60275	36	08998	95	21392	71	87606	78	85452	40
30	63910	36	03503	94	11619	73	91884	78	82245	30
40	67545	35	41298009	93	01847	71	96161	79	79037	20
50	71180	35	92516	93	12492075	71	18800441	79	75525	10
26 0	74815	34	87013	92	82303	71	04720	80	72621	034
10	78450	34	81531	91	72531	71	09000	80	69412	50
20	82084	35	76039	91	62759	71	13280	81	66204	40
30	85719	34	70548	90	52987	71	17561	80	62995	30
40	89353	34	65057	90	43216	71	21841	81	59786	20
50	92987	35	59566	90	33444	71	26122	81	56577	10
27 0	96621	33	54076	89	23673	71	30403	82	53365	033
10	66200255	33	48586	89	13901	71	34685	82	50156	50
20	03888	34	43097	88	04130	71	38967	83	46949	40
30	07522	33	37609	87	12394359	70	43250	83	43739	30
40	11155	33	32122	87	84589	71	47533	84	40529	20
50	14788	33	26635	86	74818	70	51817	84	37319	10
28 0	18421	32	21149	85	65048	71	56101	85	34105	032
10	22054	32	15663	85	55277	70	60386	85	30899	50
20	25687	32	10178	85	45507	71	64671	86	27688	40
30	29319	31	04693	84	35736	70	68957	85	24477	30
40	32951	33	41199208	84	25966	70	73242	86	21266	20
50	36584	32	93724	83	16196	69	77528	86	18055	10
29 0	40216	31	88241	83	06427	70	81814	87	14844	031
10	43848	31	82753	82	12296657	69	86101	87	11632	50
20	47479	32	77276	81	86888	70	90385	88	08421	40
30	51111	31	71794	81	77118	69	94676	88	05205	30
40	54742	32	66313	80	67349	69	98964	89	01997	20
50	58374	31	60833	80	57580	69	18903253	89	74898784	10
60	62005	31	55353	80	47811	69	07542	90	95572	030

Grad. 48.

Ggg

S.M.

Grad. 41.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
30 0	66262005	31	41155353	79	12247811	9769	28907542	90	74895572	13	60
10	65636		49874		38042		11832		92359	13	50
10	69267		44395		28273		16122		89147	13	40
30	72897	30	38917	77	18504	68	20413	91	85934	13	30
40	76528	31	33439	78	08756	69	24703	90	82721	13	20
50	80158	30	27961	77	12198967	68	28994	91	79507	14	10
31 0	83788	30	22484	76	89199	68	33285	92	76294	13	029
10	87418		17008		79431		37577		73080	13	50
20	91048		11532	75	69663		41865	93	69867	13	40
30	94678	29	06057		59895		46162		66653	14	30
40	98307	30	00582	74	50127		50455	94	63438	13	20
50	66301937	29	41095108	73	40359		54745	95	60224	14	10
32 0	05566		89634	73	30591		59043		57010	215	028
10	09195		84161		20823		63338		53795		50
20	12824		78688	72	11055	67	67633		50580		40
30	16453	28	73216		01288	68	71925		47365		30
40	20081	19	67744	71	12091520	67	76224		44155		20
50	23710	28	62273	70	81753	66	80520		40935	11	10
33 0	27338		56803		71987		84816		37719		027
10	30966		51333	69	62220		89113		34503		50
20	34594		45864		52454		93410		31287		40
30	38222		40395		42687		97708		28071		30
40	41850	27	34926	68	32920		19002006	99	24855		20
50	45477	28	29458	67	23153	66	06305		21639	17	10
34 0	49105	27	23991		13387		10604		18422		026
10	52732		18524	66	03620	67	14904		15201		50
20	56359		13058		11993854	66	19204		11988		40
30	59986		07592	65	84088		23504		08771		30
40	63613	26	02127	64	74322		27805		05554		20
50	67239	17	40996663		64557	65	32101		02336	18	10
35 0	70866	16	91199	63	54791		36408		74799149	17	025
10	74492		85736		45026	65	40710		95901		50
20	78118		80273	62	35260	66	45013		92683		40
30	81744		74711		25495	65	49316		89465		30
40	85370	25	69349	61	15730	66	53619		86246	19	20
50	88996		63887		05964	65	57923	04	83038	18	10
60	92621		58426		11896199	65	62227		79805	19	024

Grad. 48.

S.M.

Grad. 41.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
36 0	66392621	26	40958426	60	11896199	65	19062227	4	74779809	60
11	96247	1615	51966	59	86434	64	66532	5	76550	50
20	99871	14	47506	58	76669	63	70837	6	73371	40
30	66403497	25	42047	57	66905	62	75142	7	70152	30
40	07122	24	36588	56	57140	61	79448	8	66952	20
50	10746	23	31130	55	47376	60	83754	9	63713	10
37 0	14371	24	25672	54	37611	59	88061	10	60492	023
10	17995	23	20215	53	27847	58	92368	11	57153	50
20	21610	22	14758	52	18082	57	96676	12	54055	40
30	25244	21	09302	51	08318	56	19100984	13	50835	30
40	28868	20	03846	50	11798554	55	05292	14	47612	20
50	32491	19	40898391	49	88790	54	09601	15	44391	10
38 0	36115	23	91937	48	79027	63	13910	16	41171	022
10	39739	22	87483	47	69263	62	18220	17	37950	50
20	43362	21	82030	46	59500	61	22530	18	34725	40
30	46985	20	76577	45	49737	60	26840	19	31500	30
40	50608	19	71125	44	39774	59	31151	20	28280	20
50	54231	18	65673	43	30211	58	35462	21	25064	10
39 0	57854	22	60222	42	20448	57	39774	22	21841	021
10	61476	21	54771	41	10685	56	44086	23	18610	50
20	65099	20	49321	40	00922	55	48499	24	15398	40
30	68721	19	43871	39	11691159	61	52712	25	12175	30
40	72343	18	38422	38	81397	60	57025	26	08953	20
50	75965	17	32974	37	71635	59	61339	27	05730	10
40 0	79586	21	27526	47	61873	61	65653	28	02507	020
10	83208	20	22079	46	52111	60	69968	29	74699284	50
20	86830	19	16632	45	42349	59	74283	30	96061	40
30	90451	18	11186	44	32588	58	78598	31	92837	30
40	94072	17	05740	43	22816	57	82914	32	89614	20
50	97693	16	00294	42	13064	56	87230	33	86390	10
41 0	66501314	20	40794849	41	03302	61	91547	34	83166	019
10	04934	19	89405	40	11593541	60	95864	35	79942	50
20	08555	18	83961	39	83779	59	19100182	36	76717	40
30	12175	17	78518	38	74018	58	04500	37	73493	30
40	15795	16	73075	37	64256	57	08819	38	70268	20
50	19415	15	67633	36	54495	56	13138	39	67043	10
60	23035	14	62195	35	44734	55	17457	40	63818	018

Grad. 48.

S.M.

Ggg 2

Grad. 47.

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M. S.	Sinus.	D.	Logarith.	D. Different	D.	Logarith.	D.	Sinus.	D.
42 0	66523035	20	40762191	41	11544734	19217457	74663818	60	
11	26655		56750	41	34973	21777	60595	50	
20	30275		51309	40	25212	26097	57368	40	
30	33894		45869	39	15451	30418	54142	30	
40	37513		40428	38	05690	34739	50916	20	
50	41132		34990	37	11495930	39060	47690	10	
43 0	44751		29552	36	86170	43382	44464	0 17	
10	48370		24114	35	76410	47704	41238	50	
20	51989		18677	34	66650	52017	38017	40	
30	55607		13240	33	56840	56350	34785	30	
40	59226		07804	32	47129	60674	31558	20	
50	62844		02367	31	37369	64998	28331	10	
44 0	66462		40696932	30	27610	69322	25104	0 16	
10	70080		91497	29	17850	73647	21877	50	
20	73697		86063	28	08091	77972	18649	40	
30	77315		80629	27	11398331	82298	15427	30	
40	80932		75196	26	88572	86624	12194	20	
50	84549		69763	25	78813	90950	08960	10	
45 0	88166		64331	24	69054	95277	05737	0 15	
10	91783		58899	23	59295	99604	02505	50	
20	95400		53468	22	49536	9303932	4599281	40	
30	99017		48037	21	39777	08260	96052	30	
40	66602633		42607	20	30018	12589	92822	20	
50	06250		37178	19	20260	16918	89594	10	
46 0	09866		31749	18	10501	21248	86365	0 14	
10	13482		26321	17	00743	25578	83137	50	
20	17097		20893	16	1190985	29908	79906	40	
30	20713		15466	15	81227	34239	76676	30	
40	24329		10039	14	71469	38570	73446	20	
50	27944		04612	13	61711	42901	70216	10	
47 0	31559		40599186	12	51953	47233	66985	0 13	
10	35174		93761	11	42196	51565	63759	50	
20	38789		88336	10	32438	55898	60524	40	
30	42404		82912	9	22681	60231	57293	30	
40	46018		77488	8	12923	64565	54061	20	
50	49633		72065	7	03166	68899	50831	10	
60	53247		66642	6	11193408	73234	47600	0 12	

Grad. 48.

J.M.

Grad. 41.

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M S	Sinus.	D.	Logarith.	D.	Different.	D	Logarith.	D.	Sinus.	D.
48 0	6653147		40566642		11193408	9757	29373234		74547600	60
10	56861	361	61120	21	83651		77569	35	44368	32
20	60475	+	55798	21	73894		81904	436	41137	31
30	64089	13	50377		64137		86240	336	37905	30
40	67702	14	44956	20	54380		90576	37	31573	20
50	71316	13	39536	19	44624	56	94912	39	31441	10
0	74929		34117		34868		99249	37	28203	0.11
10	78542		28698		25112		29403586	38	24976	50
20	82155		23280		15355		07924	39	21743	30
30	85768		17862		05599		11263	40	18510	30
40	89381	12	12444		11095842	56	16602		15177	20
50	92992	13	07027	17	86086		20941	41	11043	34
0	96606	2	01611	16	76330		25281	40	08810	33
10	66700218		40496195		66574		29621	41	05576	34
20	03830		90780	15	56818		33962		02342	33
30	07442		85365		47062		38303		74499109	34
40	11054		79951	14	37307	55	42644	42	95874	35
50	14665	11	74537	13	27551	56	46986		92640	34
0	18277		69124		17796	55	51328		89406	35
10	21888		63711		08040	56	55671	43	86171	30
20	25495		58299	12	10998285	55	60014		82936	48
30	29110		52888	11	88531	54	64357		79701	30
40	32721		47477		78776	55	68701	44	76466	20
50	36331	10	42067	10	69022	54	73045		73230	35
0	39942	10	36657		59267	55	77390	45	69995	36
10	43552		31248	09	49513	54	81735		66759	30
20	47162		25835	08	39738	55	86021	46	63523	40
30	50772		20431		30004	54	90427		60287	30
40	54382		15023		20250	55	94773		57051	40
50	57992	09	09616	07	10496	54	99120	47	53814	37
0	61601	0	04209		00742		29503467		50578	36
10	65211	09	40398803	06	10890988		07815	48	47341	30
20	68820		93397	05	81234	53	12163		44104	40
30	72429		87992		71481	54	16511		40867	30
40	76038		82587	04	61727	53	20860	49	37630	20
50	79647	08	77183	03	51974		25209		34392	38
60	83255		71780		42221		29555	50	31155	37

Grad. 48.

S.M.

GGG 3

Grad. 41.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
54	06783255	09	40371780	03	10841221	9753	29529559	50	74431155	60
10	86864	3608	66377	01	32468	33909	33909	4351	27917	50
20	90472	3608	60975	1401	32715	38260	38260	51	24679	40
30	94080	3608	55573	1401	13962	42611	42611	52	21441	30
40	97688	3608	50172	1401	03210	46962	46962	52	18292	20
50	66801296	3608	44771	1401	10793457	51314	51314	53	14964	10
55	0	07	39370	00	83704	55666	55666	53	11725	0
10	08511	08	33970	99	73951	60019	60019	54	08486	5
20	12119	07	28571	98	64199	64372	64372	54	05247	40
30	15726	06	23172	97	54446	68716	68716	55	02008	30
40	19333	06	17774	96	44694	73080	73080	55	74398768	20
50	22940	06	12376	95	34942	77434	77434	56	95529	10
56	0	07	06979	94	25190	81789	81789	56	92289	40
10	30153	06	01583	93	15429	86144	86144	57	89049	30
20	33759	06	40296187	92	05627	90500	90500	57	85809	20
30	37366	05	90791	91	10695935	94856	94856	58	82569	10
40	40972	05	85396	90	86183	99213	99213	58	79328	0
50	44578	05	80001	89	76431	29603570	29603570	59	76088	40
57	0	06	74607	88	66680	07927	07927	59	72847	30
10	51789	05	69215	87	56928	12285	12285	60	69606	20
20	55395	05	63820	86	47177	16643	16643	60	66365	10
30	59000	04	58427	85	37425	21003	21003	61	63123	0
40	62605	04	53035	84	27674	25361	25361	61	59882	40
50	66210	04	47644	83	17924	29720	29720	62	56640	30
58	0	05	42253	82	08173	34080	34080	62	53398	20
10	73420	04	36863	81	10598423	38440	38440	63	50156	10
20	77024	04	31473	80	88672	42801	42801	63	46914	0
30	80628	04	26084	79	78912	47162	47162	64	43672	40
40	84233	03	20695	78	69171	51524	51524	64	40429	30
50	87837	03	15306	77	59420	55886	55886	65	37186	20
59	0	03	09948	76	49669	60249	60249	65	33943	10
10	95044	03	04551	75	39919	64612	64612	66	30700	0
20	98648	03	40199144	74	30169	68975	68975	66	27457	40
30	66902251	04	93758	73	20419	73339	73339	67	24214	30
40	05855	03	88372	72	10669	77703	77703	67	20970	20
50	09458	03	82986	71	00918	82068	82068	68	17726	10
60	13061	03	77401	70	10491168	86433	86433	68	14482	0

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
0	66913061	02	40177601	84	10491168	50	29686433	67	74314482	60
10	166661	03	72217	84	81418	50	90799	67	11138	50
20	20166	01	66833	83	71668	49	95165	67	07994	40
30	23868	03	61450	81	61919	50	99531	67	04750	30
40	27471	03	56067	82	52169	49	29703898	67	01505	20
50	31073	360	50685	81	42420	49	02265	68	74298260	10
1	34675	01	45103	81	32670	50	12633	68	95015	059
10	38277	0	39922	81	22921	49	17001	69	91770	50
20	41878	01	34541	80	13171	50	21370	69	88525	40
30	45480	01	29161	79	03421	49	25739	70	85279	30
40	49081	02	23782	78	10393674	48	30108	70	82033	20
50	52683	01	18403	78	83925	48	34478	71	78787	10
2	56284	00	13025	77	74177	49	38848	71	75541	058
10	59885	01	07647	77	64428	48	43219	71	72295	50
20	63486	00	02270	76	54680	47	47590	72	69049	40
30	67086	01	40096893	76	44931	48	51961	72	65802	30
40	70687	02	91517	75	35184	47	56333	73	62556	20
50	74287	02	86141	75	25436	47	60705	73	59309	10
3	77887	1596	80760	74	15688	47	65078	74	56062	057
10	81487	0	75391	74	05940	47	69451	74	52814	50
20	85086	0	70017	73	10295192	47	73825	75	49567	40
30	88686	0	64643	73	86444	47	78199	75	46319	30
40	92286	0	59270	72	76697	47	82573	76	43071	20
50	95885	0	53898	71	66950	47	86948	76	39823	10
4	99484	0	48526	71	57203	46	91323	77	36575	056
10	67003083	98	43155	71	47456	46	95699	77	33327	50
20	06682	99	37784	70	37709	46	29800075	77	30079	40
30	10281	98	32414	69	27962	46	04452	78	26830	30
40	13879	99	27044	69	18115	46	08829	78	23582	20
50	17478	98	21674	68	08468	46	13206	79	20332	10
5	21076	98	16305	67	10198721	46	17584	79	17083	055
10	24674	97	10936	68	88974	46	21962	80	13833	50
20	28272	98	05560	67	79237	46	26341	80	10584	40
30	31870	97	00201	66	69481	46	30720	80	07334	30
40	35467	98	39994834	66	59734	46	35100	80	04084	20
50	39065	97	89468	66	49988	46	39480	80	00834	10
60	42662	97	84102	66	40242	46	43820	80	74197584	054

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6 0	67042661	89	39984102	65	10140242	9746	29843860	81	74197514	60
10	46259		78737		30496		48241		94334	50
20	49836	397	73372	64	20750		52622	4382	91083	40
30	53453	96	68008	63	11004	45	57004	83	87832	30
40	57049	96	62644	63	01258	45	61386	84	84581	20
50	60646	96	57281	61	10091533	45	65768	85	81330	10
7 0	64242	96	51918	62	81767	46	70151	86	78079	053
10	67838		46556	60	72022	46	74534	87	74828	50
20	71434		41194	59	62276	45	78918	88	71576	40
30	75030	95	35833	58	52531	46	83302	89	68324	30
40	78626	96	30472	57	42785	45	87687	90	65072	20
50	82221	96	25112	56	33040	44	92072	91	61820	10
8 0	85817	95	19753	55	23295	43	96458	92	58568	052
10	89412	94	14394	54	13550	42	29900844	93	55315	50
20	93007	94	09036	53	03806	41	05310	94	52062	40
30	96602	93	03678	52	9994061	40	09617	95	48810	30
40	67100197	94	39898321	51	84317	39	14004	96	45557	20
50	03791	93	92964	50	74572	38	18392	97	42303	10
9 0	07386	94	87607	49	64827	37	22786	98	39050	051
10	10980	94	82251	48	55082	36	27169	99	35796	50
20	14574	93	76896	47	45338	35	31558	100	32543	40
30	18168	93	71541	46	35594	34	35947		29289	30
40	21762	92	66187	45	25850	33	40337		26035	20
50	25356	91	60833	44	16106	32	44727		22781	10
10 0	28949	94	55480	43	06362	31	49116		19526	050
10	32543	93	50128	42	9896619	30	53509		16272	50
20	36136	92	44776	41	86875	29	57901		13017	40
30	39729	91	39424	40	77131	28	62293		09762	30
40	43322	90	34073	39	67388	27	66685		06507	20
50	46914	89	28722	38	57644	26	71078		03251	10
11 0	50507	88	23372	37	47901	25	75471		74099996	049
10	54099	87	18023	36	38158	24	79865		96740	50
20	57692	86	12674	35	28415	23	84259		93485	40
30	61284	85	07325	34	18672	22	88653		90229	30
40	64876	84	01977	33	08929	21	93048		86972	20
50	68467	83	39796629	32	9799186	20	97443		83716	10
60	72059	82	91232	31	89443	19	30001835		80460	048

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M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
12 0	67172059	91	39791283	46	9789443	42	30001839	96	74080460	60
10	75650	91	85936	46	79701	42	06235	97	77203	50
20	79242	92	80590	51	69958	43	10632	97	73946	40
30	82833	91	75245	51	60216	42	15024	97	70689	30
40	86424	90	69900	51	50473	43	19425	97	67432	20
50	90015	90	64555	44	40730	43	23825	97	64174	10
13 0	93605	91	59211	43	30988	42	28224	19	60917	57
10	97196	90	53868	43	21246	42	32625	19	57659	50
20	67200786	90	48525	42	11504	41	37021	19	54401	40
30	04376	89	43183	41	01762	41	41421	19	51143	30
40	07966	89	37841	41	9692020	41	45821	19	47885	20
50	11556	89	32500	41	82279	41	50221	19	44627	10
14 0	15146	89	27155	40	72537	42	54621	19	41368	046
10	18735	90	21815	40	62796	41	59023	19	38109	50
20	22325	89	16479	39	53054	41	63425	19	34850	40
30	25914	89	11140	39	43313	42	67827	19	31591	30
40	29503	88	05801	38	33571	41	72133	19	28332	20
50	33092	88	00463	38	23830	42	76633	19	25072	10
15 0	36681	88	39695185	37	14088	41	81037	19	21813	045
10	40269	88	89788	37	04347	41	85441	19	18553	50
20	43858	89	84451	36	9594606	40	89845	19	15293	40
30	47446	88	79115	36	84865	40	94250	19	12033	30
40	51034	88	73775	35	75124	40	98655	19	08772	20
50	54622	88	68444	34	65383	40	30103061	19	05512	10
16 0	58210	87	63110	34	55643	41	07467	19	02253	044
10	61798	87	57776	33	45902	40	11874	19	73998990	50
20	65385	87	52443	33	36162	40	16281	19	59729	40
30	68972	88	47110	32	26422	41	20688	19	56468	30
40	72560	87	41778	32	16682	41	25096	19	53107	20
50	76147	86	36446	31	06942	41	29504	19	50945	10
17 0	79733	87	31114	31	9497201	40	33913	19	48683	043
10	83320	86	25783	31	87461	41	38322	19	45421	50
20	86907	86	20452	30	77720	40	42732	19	42159	40
30	90493	86	15122	30	67980	40	47142	19	38897	30
40	94079	86	09793	29	58241	39	51552	19	35635	20
50	97665	86	04464	28	48501	40	55963	19	32372	10
60	67301251	86	39599136	28	38762	39	60374	19	63109	042

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S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
18 0	67301251	86	39599136	18	9438761	40	30160374	412	73963109	60
11	04837		93808	27	29022	9739	64786		59846	50
20	08423	385	88481	26	19283		69198	13	56583	40
30	12008		83154	25	09544		73610	14	53320	30
40	15593		77828	24	9399805		78023	15	50057	20
50	19178		72501	23	90066		82436	16	46793	10
19 0	22763	84	67177	22	80327	38	86850	17	43329	041
10	26348		61852	21	70588		91264	18	40165	50
20	29933	84	56528	20	60849		95679	19	37001	40
30	33517	85	51204	19	51110	39	30300094	20	33737	30
40	37102	84	45881	18	41372	38	04509	21	30472	20
50	40686		40559	17	31634		08925	22	27207	10
20 0	44270	83	35237	16	21896	39	13341	23	23943	040
10	47854		29915	15	12157	38	17758	24	20678	50
20	51437	83	24594	14	02419		22175	25	17412	40
30	55021	84	19274	13	9292681		26593	26	14147	30
40	58604	83	13954	12	82943	37	31011	27	10881	20
50	62188	83	08635	11	73205		35430	28	07616	10
21 0	65771	82	03316	10	63467	37	39849	29	04350	039
10	69354		39497998	9	53729		44269	30	01084	50
20	72936	83	92680	8	43991	38	48689	31	78978 18	40
30	76519	82	87363	7	34253	37	53110	32	94951	30
40	80101	83	82046	6	24516	38	57530	33	91285	20
50	83684	82	76729	5	14778	37	61951	34	88018	10
22 0	87266	81	71413	4	05041	38	66372	35	84751	038
10	90848		66097	3	9195303	37	70794	36	81484	50
20	94429	82	60782	2	85565	37	75217	37	78216	40
30	98011	81	55468	1	75828	36	79640	38	74949	30
40	69401593		50154	0	66091	37	84063	39	71681	20
50	05174	81	44841	0	56354	36	88487	40	68414	10
23 0	08755	80	39528	0	46617	36	92911	41	65146	037
10	12336		34216	0	36880	37	97336	42	61877	50
20	15917	81	28904	0	27143	36	30301761	43	58609	40
30	19498	80	23593	0	17407	37	06186	44	55341	30
40	23078		18282	0	07670	36	10613	45	52072	20
50	26658	81	12972	0	9097934	37	15038	46	48803	10
60	30239		07662	0	88197	37	19465	47	45534	036

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S.M

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M.S	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
24 0	67430239	80	39407662	09	9088197	36	30319465	17	73845534	69	60
10	33819		02353		78461		23892	18	42265	70	50
20	37399	79	39397044	08	68724	37	28320	29	38995	69	40
30	40978	80	91736		58987		32749	28	35726	30	30
40	44558	79	86428	07	49251	36	37177	19	32456	20	20
50	48137	80	81221	06	39515	35	41606		29186	10	10
25 0	51717	79	75815		29780	36	46035	30	25916		035
10	55296		70509	05	20044	35	50465		22646	50	
20	58875	78	65204		10309	36	54895	+	19376	40	
30	62453	79	59899	+	00573	35	59326	+	16105	30	
40	66032		54595	+	8990838	35	63757		12834	20	
50	69611		49291	+	81103	36	68188	32	09563	10	
26 0	73189	378	43987	03	71367	9735	72620		06292		034
10	76767		38684	02	61632		77052	33	03021	50	
20	80345		33382		51897		81485		73799749	72	40
30	83923		28080	01	42162		85918	34	96478	71	30
40	87501	77	22779		32427		90352		93206	72	20
50	91078		17478	00	22692	34	94786		89934	73	10
27 0	94655	78	12178		12958		99220		86662		032
10	98233	77	06878	+	03224	30403654	30403654		83390	74	
20	67501810		01579	+	8893490		08089	35	80117	73	40
30	05387	76	39296280	98	83755	35	12525	36	76844	72	30
40	08963	77	90982		74021	34	16961		73572	73	20
50	12540	76	85684	97	64286	35	21398	37	70299	74	10
28 0	16116		80387		54552	34	25835	38	67025	73	032
10	19692		75090		44817	35	30273		63752	74	50
20	23268		69794	96	35083	34	34711		60478	73	40
30	26844		64498		25349		39149	39	57205	74	30
40	30420		59203	95	15615		43588		53931	75	20
50	33996	75	53908	94	05881		48027	40	50657	76	10
29 0	37571	76	48614		8796147		52467		47383	75	031
10	41147	75	43320	93	86413		56907	41	44108	74	50
20	44722		38027		76679		61348		40834	75	40
30	48297		32734	92	66945		65789	42	37559	76	30
40	51872	74	27442		57211		70231		34284	77	20
50	55446	75	22150	91	47477		74673		31009	78	10
60	59021		16859		37744	33	79115		27734		030

Grad. 47.

S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
30 0	67559021	374	39116859	190	8737744	33	30479115	43	73727734	60
10	61595		11569		28011		83558		24458	50
20	66169	4	06179		18278		88001		21183	40
30	69743		00989	89	08544	34	92445	44	17907	30
40	73317		39195700		8698811	9731	96889	44	14631	20
50	76891	73	90411	88	89078	35	30501333	45	11355	10
31 0	80464	74	85123	87	79345	31	05778	45	08078	029
10	84038	73	79836		69613	33	10223	46	04801	50
20	87611		74549	86	59880	32	14669	46	01525	40
30	91184		69263		50148	32	19115	47	73698248	30
40	94717		63977		40416	33	23561	47	94971	20
50	98330	72	58691	85	30683	33	28008	47	91694	10
32 0	67601902	73	53406		20950		32456	48	88417	028
10	05475	72	48121	84	11217	32	36904	49	85139	50
20	09047		42837		01485	33	41351	49	81862	40
30	12619		37553	83	8591752	33	45801	50	78584	30
40	16191		32170	82	82010	34	50250	50	75106	20
50	19763		26988	81	72188		54700	51	72028	10
33 0	23335	71	21706	81	62556		59150	51	68745	027
10	26906		16425		52824		63601	52	65472	50
20	30477	72	11144	80	43092	31	68052	52	62192	40
30	34049	71	05864	79	33361		72503	53	58913	30
40	37620	70	00585		23630		76955	53	55634	20
50	41190	71	3095306		13899	32	81407	54	52355	10
34 0	44761		90027		04167	32	85860	54	49075	026
10	48332	70	84749	78	8494436	31	90313	54	45796	50
20	51902		79471	77	84704	32	94767	54	42518	40
30	55472		74194		74973	31	99221	55	39236	30
40	59042		68917	76	65242		30603675	55	35956	20
50	62612	69	63641	75	55511	30	08130	55	32676	10
35 0	66182	69	58366		45781	31	12588	56	29595	025
10	69751	70	53091		36050	31	17041	56	26114	50
20	73321	69	47816	74	26319		21492	57	22834	40
30	76890		42542		16588		25954	57	19553	30
40	80459		37168	73	06857	50	30411	58	16271	20
50	84028		31995	72	8397127		34868	58	12990	10
60	87597		26723		87397		39326	58	09709	024

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S.M.

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M. S.	Sinus.	D.	Logarith.	D. Different.	D.	Logarith.	D.	Sinus.	D.
36 0	67687597	69	39026723	8387397	9730	30639326	58	73609709	60
11	91166		21451	77667		43784	58	06427	50
20	94734		16180	67937		48243	59	03145	40
30	98302		10909	58207		52702		73599863	30
40	67701870		05638	48476		57162		96581	20
50	05438		00368	38746		61622		93299	10
37 0	09006		38995098	29016		66082	61	90016	83
10	12574		89829	19286		70543		86733	023
20	16141		84560	09556		75004		83450	50
30	19709		79292	8299826		79466	62	80167	40
40	33276		74025	90097		83928		76884	30
50	26843		68758	80367		88391	63	73603	20
38 0	30410		63492	70638		92854		70317	10
10	33977		58226	60908		97318	64	67033	022
20	37543		52960	51178		10701782		63749	50
30	41109		47695	41449		06246		60465	40
40	44676		42431	31720		10711	65	57181	30
50	48242		37167	21991		15176	66	53897	20
39 0	51808		31904	12262		19642		50612	10
10	55373		26641	02533		24108	67	47327	021
20	58939		21379	8192804		28575		44042	50
30	62504		16117	83075		33042		40757	40
40	66070		10856	73347		37509	68	37472	30
50	69635		05995	63618		41977		34186	20
40 0	73200		00335	53890		46445	69	30901	10
10	76765		38895075	44161		50914		27615	85
20	80329		89816	34433		55383	70	24329	80
30	83894		84557	24704		59853		21043	70
40	87458		79299	14976		64323		17756	60
50	91022		74041	05248		68793		14470	50
41 0	94586		68784	8095520		73264	71	11183	40
10	98150		63527	85792		77735		07896	30
20	67801714		58271	76064		82207	72	04609	20
30	05277		53015	66336		86679		01322	10
40	08841		47760	56608		91152	73	73498035	019
50	12404		42506	46881		95625		94747	50
60	15967		37252	37254		10800098		91459	40

Grad. 47.

S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 0	67815967		88837252		8037154		30800098		73491459	60
10	19530	63	31999	2	17427	17	04572	74	88171	50
20	23093		16746		17704		09046		84883	40
30	26655	62	81493	51	07972	18	13522	75	81595	30
40	30218	63	16245		7998145	17	17996		78307	20
50	33780	3562	10989	51	88517	17	21472	76	75018	10
43 0	37342		05738		78790		26948		71729	017
10	40904		00487		69062	28	31425	77	68440	50
20	44466	61	38795237	50	59335	9727	35902		65151	40
30	48027	62	89987	49	49608	27	40379		61862	30
40	51589	61	84738	48	39881	16	44857	78	58573	20
50	55150		79490	47	30155	27	49335	79	55283	10
44 0	58711		74242		20428	26	53814		51893	016
10	62272		68995	47	10702	27	58293	80	48703	50
20	65833	60	63748	46	00975	26	62773		45413	40
30	69393	61	58502		7891249	27	67253	81	42123	30
40	72954	60	53256	45	81522		72734		38832	20
50	76514		48010	44	71795	16	76235	82	35542	10
45 0	80074		42745		62069		80696		32251	015
10	83634		37521	44	52343		85178	83	28960	50
20	87194		32277	43	42617		89660		25669	40
30	90754		27034		32891		94143	84	22377	30
40	94314	59	21793	42	23165	25	98626	85	19086	20
50	97873		16548	41	13439	25	30903109		15794	10
46 0	67901432		11306		03713	25	07593		12502	014
10	04991		06065	41	7793988	26	12077	86	09210	50
20	08550		00824	40	84262	25	16562	87	05918	40
30	12109	58	3869584	39	74537	26	21047		02626	30
40	15667	59	30344		64811		25533	88	73399333	20
50	19226	58	25104	38	55085		30019		96040	10
47 0	22784		79865		45359		34506	89	92747	013
10	26342		74627	37	35634	25	38993		89454	50
20	29900		69389	36	25909		43480		86161	40
30	33458		64152		16184		47968	90	82868	30
40	37016	57	58915	35	06459		52456		79574	20
50	40573		53679		7696734	26	56945		76280	10
60	44130		48443		87008		61435		72986	012

Grad. 47.

S. M.

M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
48	67944130	3557	38648443	35	7687008	9715	30961435	90	73372986	3004
10	47687		43208	35	77283		65929		69692	50
20	51244		37973	34	67558		70415	4491	66398	40
30	54801		32739		57833		74906		63104	95
40	58358	56	27505	33	48108	24	79397	92	99809	20
50	61914	57	22272		38384	25	83888		56514	10
0	65471	56	17039	32	28659	25	88380		53219	011
10	69027		11807		18935	24	92872		49924	50
20	72583		06575	31	09210	25	97365	93	46629	40
30	76139		01344		7599486	24	1001858		43333	96
40	79695	55	38596113	30	84761	25	06352	94	40038	95
50	83250	56	90883		80037	24	10846		36742	96
0	86806	55	85653	29	70313		15340	95	33446	010
10	90361		80424		60589		19835		30150	97
20	93916		75195	28	50865		24330	96	26853	40
30	97471	54	69967		41141		28826		23557	96
40	68001025	55	64739	27	31417		33322	97	20260	97
50	04580	55	59512	27	21693		37819		16963	10
0	08134	54	54285	26	11969		42316	98	13666	0
10	11689	55	49059		02245		46814		10369	98
20	15243	54	43833	25	7492521	23	51312		07071	97
30	18797		38608		82798	24	55810	99	03774	98
40	22351	53	33383	24	73074	23	60309		00476	99
50	25904	54	28159	23	63391		64808	01	73297178	10
0	29458	53	22936	22	53628		69308	00	93880	0
10	33011		17713		43905	24	73808	01	90582	0
20	36564		12490	21	34181	23	78309		87283	99
30	40117		07268		24458		82810		83985	98
40	43670		02046	21	14735		87311	02	80686	99
50	47223	52	38496825	20	05012	22	91813		77387	10
0	50775		91605		7395290	23	96315	03	74088	0
10	54327	53	86385		85567		1100818		70789	0
20	57880	52	81165	19	75844		05321	04	67489	00
30	61432		75946	18	66121	22	09825		64190	99
40	64984	51	70728		56399		14325		60890	300
50	68535	52	65510	17	46677		18833	05	57590	10
60	72087		60293		36955		23338		54290	0

M. S.	Sinus.	D.	Logarith.	D.	Different.	D	Logarith.	D.	Sinus.	D.
54	68071087	3551	38460193	17	7336955	22	51123338	05	73254290	60
10	75638		55076		27233	23	27843	05	50989	50
20	79189		49859	16	17510	9722	32349	06	47689	40
30	82740		44643		07788		36855		44388	30
40	86291		39428	15	7298066		41361	07	41087	20
50	89842		34213		88344		45869	08	37786	10
55	93393	50	28999	14	78612		50377		34485	05
10	96943		8385		68900		54885		31184	50
20	68100493		18572	13	59178		59394	4509	27882	40
30	04043		13359		49456	21	63903		24581	30
40	07593		08147	212	39735	22	68412		21179	20
50	11143		02935		30013		72922	10	17977	10
56	14693	49	38397723	11	20291		77432	11	14675	04
10	18242	50	92512		10569	21	81943		11372	50
20	21792	49	87302	10	00848		86454		08070	40
30	25341		82092		7191127		90965		04765	30
40	28890		76883	09	81406		95477	12	01464	20
50	32439	48	71674		71685		99989	13	73198161	10
57	35987	49	66466	08	61964		31204501		94858	03
10	39536	48	61258		52243		09015	14	91154	50
20	43084		56051	07	42522		13525		88251	40
30	46632		50844		32801		18045	15	84547	30
40	50180		45638	06	23080		22558		81643	20
50	53728		40432	05	13359	10	27073		78339	10
58	57276	47	35227		03639	21	31588	16	70535	02
10	60823	48	30022		7093918	20	36104		71730	50
20	64371	47	24818	04	84198	21	40620	17	68426	40
30	67918		19614		74477	20	45137		65121	30
40	71465		14411	03	64757	21	49654	18	61816	20
50	75012		09208	02	55034	20	54172		58511	10
59	78559	46	04006		45316	21	58690	19	55205	05
10	82105	47	38298804		35595	20	63209		51900	50
20	85652	46	93603	01	25875		67728		48594	40
30	89198		88402	00	16155		72247	20	45289	30
40	92744		83202		06435		76767		41983	20
50	96290		78002	199	6496715		81287	21	38676	10
60	99836		72803		86995		85801		35370	00

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M. S.	Sinus.	D.	Logarith.	D. Different.	D. Logarith.	D.	Sinus.	D.
0	68199836		38272803	6986995	31285808		72139370	60
10	68203321	46	67604	77275	90325	21	31064	50
20	06927	45	62406	67555	94851	41	28757	40
30	40472	46	57208	57835	99373	51	15430	30
40	14018	45	52011	48116	31303895	61	22143	20
50	17563	44	46814	38396	08418	71	18836	10
1	0		41618	28677	1294	81	25529	07
10	24652	45	36422	18957	17465	91	12221	08
20	28197	44	31227	09238	21985	01	08913	10
30	31741	44	26032	6899518	26514	11	05603	30
40	35285	43	20838	89799	31035	21	02197	20
50	38829	42	15644	80075	35564	31	73098987	10
2	0		10451	70360	4009	41	95681	05
10	43917	43	05258	60641	44617	51	92372	50
20	49460	42	00066	50922	49144	61	89063	40
30	53004	41	38194874	41203	53671	71	85754	30
40	5654	40	89683	31484	58195	81	83445	20
50	60090	39	84492	21765	62727	91	79136	10
3	0		79302	12046	67256	01	75827	10
10	67175	42	74112	02327	71785	11	72517	50
20	70718	41	68923	6792608	76315	21	69207	40
30	74260	40	63734	82885	80845	31	65897	30
40	77803	39	58546	73171	85375	41	62587	20
50	81345	38	53356	63453	89906	51	59277	10
4	0		48472	53735	94437	61	55965	05
10	88428	37	42986	44017	98969	71	52656	50
20	91970	36	37800	34299	3143501	81	49345	40
30	95512	35	32614	24580	08034	91	46034	30
40	99053	34	27429	14862	12567	01	42723	20
50	68302594	33	22244	05143	17101	11	39412	10
5	0		17060	6695425	21635	21	36100	11
10	09676	32	11877	85708	26169	31	32785	50
20	13216	31	06694	75990	30704	41	29477	40
30	16757	30	01511	66272	35239	51	26165	30
40	20297	29	38096329	56554	39775	61	22853	20
50	23837	28	91147	46836	44311	71	19540	10
60	27377	27	85966	37119	48847	81	16228	05

Grad. 46.

S.M.

Grad. 43.

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
6	0 68317377		38085966		6637119		31448847		73016228	60
10	30917	40	80786		27402	17	53384	37	12315	30
20	34457		75606		17685		57921	38	09602	40
30	37996	39	70426		07967		62459		06289	30
40	41536	40	65247	79	6598249		66998		02976	20
50	45075		60068	78	88531	17	71537		72999661	10
7	0 48614		54890		78814	18	76076	40	96349	053
10	52153		49712		69096	17	80616		93035	14
20	55692	38	44535	77	59379	18	85156	41	89721	40
30	59230	39	39358	76	49661	17	89697		86407	30
40	62769	38	34182	75	39944	16	94238		83083	20
50	66307		29007		30228	17	98779		79775	10
8	0 69845		23832	74	20511	16	31503321	42	76464	15
10	73383		18658		10795	17	07863		73149	052
20	76921		13484	73	01078	16	12406	43	69834	40
30	80458	37	08311		6491362	17	16945		66515	30
40	83996	38	03138		81645	17	21495	44	63204	20
50	87533	37	37997965	72	71928	16	26037		59885	10
9	0 91070		92793		62212	17	30581		56573	16
10	94607		87631	71	52495	17	35126	45	53257	051
20	98144		82450	70	42779	16	39671		49541	40
30	68401680	36	77280		33063	17	44217	46	46625	30
40	05217	37	72110		23346	16	48764	47	43305	20
50	08753	36	66941	69	13630	17	53311		39992	10
10	0 12289		61772	68	03913	17	57855	48	36676	16
10	15825		56604		6394197	16	62407		33355	050
20	19361		51436		84481	17	66951	49	30042	40
30	22897	35	46268	67	74764	16	71504		26725	30
40	26432	36	41101		65048	15	76053		23405	20
50	29968	35	35914	66	55132	15	80602		20090	10
11	0 33503		30768		45617	16	85151	50	16770	049
10	37038		25602	65	35901	15	89701		13454	30
20	40573		20437		26186	16	94251	51	10336	20
30	44107	34	15272	64	16470	15	98802		06818	10
40	47642	35	10108	63	06755	15	31603355	52	03500	0
50	51176	34	04945		6297040	16	07905	53	00181	19
60	54711	35	37899782		87324		12458		72896863	18

Grad. 46.

S. M.

Grad. 43.

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M. S.	Sinu.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinu.	D.	
12 0	68454711		37899782		6287324		38612458		72896863		60
10	58245	34	94620	5162	77609	15	17011	53	93544	319	50
20	61779		89458		67893	16	21565	4554	90225	40	40
30	65312	33	84296	61	58177	15	26119	55	86906	20	30
40	68846	34	79135		48462	16	30673	55	83586	19	20
50	72379	34	73974	60	38746	15	35228		80267	20	10
13 0	75913	33	68814	59	29031	14	39783		76947		047
10	79440		63655		19317		44318	56	73627	50	
20	82979	32	58496		09602		48894		70307	40	
30	86511	32	53337	58	6199887		53450	57	66987	30	
40	90044	33	48179		90172	16	58007	58	63666	21	20
50	93576	32	43021	57	80456	15	62565		60346	20	10
14 0	97109		37864		70741		67123		57025		046
10	68500641		32707	56	61026		71681	59	53704	50	
20	04173	31	27551	55	51311	14	76240		50383	40	
30	07705	31	22396		41597	15	80799	60	47062	30	
40	11236	32	17241	54	31882	14	85359		43740	21	20
50	14768	31	12087		22168	14	89919		40419	21	10
15 0	18299		06933	53	12454		94479	61	37097		045
10	21830		01780		02740		99040		33775	50	
20	25361	32	37796627	52	6095026		31703601	62	30453	40	
30	28892		91475		83312		08163		27131	30	
40	32423	30	86323		73598	15	12725	63	23808	23	20
50	35953	31	81171	51	63883	14	17288		20486	23	10
16 0	39484	40	76020		54169	15	21851	64	17163	23	044
10	43014		70869	50	44494	14	26415		13840	50	
20	46544		65719	49	34740	13	30979		10517	40	
30	50074	29	60570		25027	14	35543	65	07193	24	30
40	53603	30	55421		15313	13	40108		03870	23	20
50	57133	30	50273	48	05600	14	44673	66	00546	24	10
17 0	60662	29	45125	47	5995886	13	49239		72797222		043
10	64192	29	39978		86173	14	53805	67	93895	50	
20	67721		34831	46	76459	13	58372		90574	40	
30	71250	28	29685		66746	14	62939	68	87250	30	
40	74778	29	24539		57032		67507		83925	25	20
50	78307	28	19393	45	47318	13	72075		80601	25	10
60	81835		14248		37605		76643		77276		042

Grad. 46.

S.M.

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M. S.	Sinus.	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus.	D.
18 0	8581835	29	37714248	45	5937605	-14	31776643	69	1777276	60
10	85364	28	09103	45	17891	-14	81212	70	73951	25
20	88892	27	03959	44	18178	-14	85781	70	70626	40
30	92419	26	37698816	43	08465	-14	90351	70	67300	30
40	95947	25	93673	42	5898752	-14	94921	70	63979	25
50	99475	24	88531	41	89034	-14	99492	70	60645	10
19 0	68605003	27	83389	41	79326	-12	31804063	471	57323	30
10	06530	27	78248	41	69614	-12	08634	74	53997	30
20	10057	26	73107	40	59901	-12	13206	74	50671	40
30	13384	25	67967	39	50185	-12	17778	73	47344	30
40	17111	24	61827	38	40476	-12	22351	73	44018	26
50	20637	23	57687	37	30763	-12	26924	74	40691	27
20 0	24164	22	53548	36	21050	-12	31498	74	37364	40
10	27690	21	47410	35	11338	-12	36072	75	34037	50
20	31316	20	42272	34	01625	-12	40647	75	30710	10
30	34742	19	37135	33	5791913	-12	45222	76	27381	28
40	38268	18	31998	32	82200	-12	49798	76	24055	7
50	41794	17	26861	31	72481	-12	54374	76	20721	28
21 0	45315	16	21725	30	62775	-12	58950	77	17395	39
10	48845	15	16585	29	53062	-12	63522	77	14071	50
20	52370	14	11454	28	43350	-12	68104	78	10745	40
30	55895	13	06315	27	33637	-12	72682	78	07414	30
40	59420	12	01185	26	23925	-12	77260	79	04087	21
50	62945	11	37596052	25	14212	-12	81835	79	00757	25
22 0	66469	10	90910	24	04501	-11	86418	80	1697428	38
10	69993	9	85787	23	5694780	-11	90998	80	94095	50
20	73518	8	80655	22	85077	-11	95578	81	90770	40
30	77042	7	75523	21	75365	-11	1900158	81	87440	30
40	80566	6	70392	20	65653	-11	04739	81	84110	20
50	84089	5	65261	19	55941	-11	09320	82	80781	29
23 0	87613	4	60131	18	46220	-11	13902	82	77451	30
10	91136	3	55001	17	36518	-11	18484	83	74120	31
20	94660	2	49873	16	26806	-11	23067	83	70790	30
30	98183	1	44744	15	17094	-11	27650	84	67460	30
40	68701706	21	39616	14	07382	-11	32234	84	64129	20
50	05228	20	34488	13	5597670	-11	36818	84	60698	10
60	08751	19	29361	12	87959	-11	41402	84	57467	036

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S.M.

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M. S.	Sinus.	D.	Logarith. D.	Different.	D.	Logarith. D.	Sinus.	D.
24 0	68708751	23	37529361	5587955	11	31941402	72657467	60
10	11274	24	34235	78248	11	45987	34136	31
20	15796	25	19169	68537	12	50572	50809	40
30	19318	26	13983	58825	11	55158	47473	30
40	22840	27	08858	49114	12	59744	44141	20
50	26362	28	03733	39402	13	64331	40809	10
25 0	29883	29	37498609	29691	9711	68918	37477	035
10	33405	30	93486	19980	10	73506	34145	50
20	36926	31	88363	10269	10	78094	30813	40
30	40447	32	83241	00559	11	82682	27480	30
40	43968	33	78119	5490848	11	87271	24148	20
50	47489	34	72997	81137	12	91860	20815	10
26 0	51010	35	67876	71426	10	96450	17482	34
10	54530	36	62756	61716	11	32001040	14148	034
20	58051	37	57636	52005	11	05631	10815	30
30	61571	38	52517	42295	10	10222	07481	40
40	65091	39	47398	32584	11	14814	04148	30
50	68611	40	42279	22873	10	19406	00814	20
27 0	72131	41	37161	13163	11	23998	72597480	10
10	75650	42	32044	03453	93	28591	94145	033
20	79169	43	26927	1393743	94	33184	90811	30
30	82689	44	21810	84032	11	37778	87475	40
40	86208	45	16694	74322	10	42372	84142	30
50	89727	46	11578	64621	11	46967	80807	20
28 0	93245	47	06463	54901	10	51562	77472	10
10	96763	48	01348	45190	11	56158	74136	032
20	68800282	49	17396234	35480	10	60754	70801	30
30	03801	50	91320	25770	11	65350	67465	40
40	07319	51	86007	16060	10	69947	64130	30
50	10837	52	80894	06350	11	74544	60794	20
29 0	14354	53	75782	5296640	10	79142	57457	10
10	17872	54	70670	86930	09	83740	54122	031
20	21385	55	65555	77221	10	88338	50789	30
30	24907	56	60448	67511	11	92937	47448	40
40	28424	57	55338	57801	10	97537	44115	30
50	31941	58	50225	48091	09	31102127	40774	20
60	35458	59	45119	38381	10	06738	37437	10

Grad. 46.

S.M.

Grad. 43.

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M. S.	Sinus.	D.	Logarith. D.	Different. D.	Logarith. D.	Sinus.	D.				
30 0	68835458	16	37345119	09	5238381	9710	32106738	01	72537437	37	60
10	38974		40010		28671		11339		34100	37	50
20	42491	17	34902		18961	9710	15941	4602	30762	38	40
30	46007		29794		09251	09	20543		27425	37	30
40	49523		24687		5199542	09	25145		24087	37	20
50	53039		19581		89833		29748	03	20749	37	10
31 0	56555		14475		80124	10	34351		17411	39	029
10	60071		09369		70414	09	38955		14072	38	50
20	63586	75	04164	05	60705		43559		10734	39	40
30	67102	16	37299159	03	50996		48163		07395	39	30
40	70617	15	94055		41287	08	52768		04056	20	
50	74132		88952		31579	09	57373	06	00717	10	
32 0	77646	14	83849	02	21870	09	61979		71497378	0	28
10	81161	15	78747		22162	08	66585		94039	40	50
20	84676		73645		02453	09	71192	07	90699	40	40
30	88190	14	68543		5092744		75799		87359	30	
40	91704		63442	01	83035		80407	08	84019	20	
50	95218		58341	00	73326		85015	09	80679	10	
33 0	98732		53241		63617		89624		75339	0	27
10	68902146		48141		53908	08	94233		73999	41	50
20	05759	13	43042		44200	09	98842		70658	40	40
30	09273	14	37943		34491	08	32203452	10	67318	40	
40	12786	13	32845	98	24783	09	08062		63977	41	30
50	16299		27747	97	15074	08	12673	11	60636	41	20
34 0	19812		22650		05366	09	17284		57294	41	10
10	23325		17553		4995657	08	21896		53953	41	0
20	26837	12	12457	96	85949	09	26508		50611	42	50
30	30350	13	07361		76240	08	31121	13	47270	41	40
40	33862	12	02266	95	66532		35734		43928	42	30
50	37374		37197171		56824		40347		40586	42	20
35 0	40886		92077	94	47116		44961	14	37243	43	10
10	44398		86983		37408		49575		33902	41	0
20	47910		81890	93	27700		54190	15	30558	43	50
30	51422	11	76797		17992		58805		27215	40	
40	54932		71705	92	08284		63422	16	23872	50	
50	58443		66613		4898576		68037		20529	20	
60	61954		61522	91	88868		72654	17	17286	10	

Grad. 46.

S.M.

Grad. 43.

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M S	Sinus	D.	Logarith.	D.	Different	D.	Logarith.	D.	Sinus	D.
36	68961954	11	37161522	91	4888868	08	32172654	18	72417186	60
10	65465		56431	90	79160	07	77271		13843	33
20	68976		51341		69453	07	81888		10499	40
30	72486	10	46251	89	59745	07	86506	18	07155	30
40	75997	11	41162		50033	08	91124		03811	20
50	79507	11	36073	88	40330	07	95743	19	00467	10
0	83017		30985		30623	08	32300362	20	72397123	023
10	86527		25897	87	10915	07	04982		93778	45
20	90036	09	20810		11208	07	09602		90434	44
30	93544	10	15723	86	01500	07	14223	21	87089	45
40	97055	09	10637		4791793	08	18844		83744	30
50	69000564		05551	85	82085	07	23466	22	80399	20
0	04073		00466		72378	08	28088		77053	10
10	07582		37095381	84	61670	07	32711	23	73708	022
20	11091	08	90297		52963	07	37334		70362	45
30	14599	08	85213	83	43255	08	41958	24	67016	40
40	18108	09	80129		33548	07	46581		63670	30
50	21610	08	75046	82	23841	06	51205	25	60324	20
0	25124		69964		14135	07	55829		56978	10
10	28632		64882	81	04428	06	60454	26	53631	021
20	32140	07	59801		4694722	06	65079		50285	45
30	35647	07	54720	80	85015	07	69705	27	46938	40
40	39155	08	49640		75308	08	74332		43591	30
50	42662	07	44560	79	65601	07	78959	28	40244	20
0	46109		39480		55893	07	83587		36896	10
10	49674		34401	78	46186	06	88215	29	33549	020
20	53185	06	29323		36479	06	92844		30201	45
30	56619	07	24245	77	26773	07	97472	30	26853	40
40	60196	06	19167		17066	08	32402101		23505	30
50	63702		14095	76	07360	07	06730	31	20157	20
0	67208		09013		4597653	06	11360		16808	10
10	70714		03937	75	87947	07	15590	32	13460	019
20	74220	05	3699886		78240	06	20621		10111	45
30	77725	06	93786	74	68534	07	25252	33	06762	40
40	81231	05	88711		58827	08	29884		03413	30
50	84736		83637	73	49120	06	34517		00064	20
60	88241		78564		39414		39150		72296715	10

Grad. 46.

S.M.

Grad. 43.

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M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D. Sinus.	D
2 0	69088141	36978564	4532414	31439150	71296715	60
10	91746	73491	29708	43783	93365	50
20	95351	68419	20001	48417	90015	40
30	98756	63347	10296	51051	86665	30
40	69101260	58275	00589	57686	83315	20
50	05764	53204	4490883	62321	79965	10
3 0	09268	48133	81177	66956	76615	017
10	11772	43063	71471	71592	73264	50
20	16276	37993	61765	76228	69913	40
30	19780	32924	52059	80865	66562	30
40	23283	27855	42353	85502	63211	20
50	26787	22787	32647	90140	59860	10
4 0	30290	17720	22942	94778	56508	016
10	33793	12653	13236	99417	53157	50
20	37296	07587	03531	32504056	49805	40
30	40798	02521	4393825	08696	46453	30
40	44301	16897455	84119	13336	43101	20
50	47803	92390	74414	17976	39749	10
5 0	51306	87325	64708	22617	36396	015
10	54806	82261	55003	27258	33044	50
20	58309	77197	45298	31899	29691	40
30	61811	72134	35593	36541	26338	30
40	65313	67071	25887	41184	22985	20
50	68814	62009	16182	45827	19631	10
6 0	72315	56947	06476	50471	16278	014
10	75816	51884	4296771	55115	12924	50
20	79317	46825	37065	59760	09570	40
30	82818	41765	77360	64405	06216	30
40	86319	36705	67655	69050	02862	20
50	89819	31646	57950	73694	72199508	10
7 0	93315	26582	48245	78342	96153	013
10	96819	21529	38540	82989	92759	50
20	69200319	16472	28835	87636	89444	40
30	03815	11414	19130	92284	86089	30
40	07319	06357	09425	96932	82734	20
50	10818	01301	4199721	12601580	79378	10
60	14317	30796246	90017	06229	76023	012

Grad. 46

S.M.

Grad. 43.

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M. S.	Sinus.	D.	Logarith.	D.	Difference	D.	Logarith.	D.	Sinus.	D.
48 0	921432		767962		+10017	126002	9	701760	23	60
10	17310		91151		80117	1008	5	71607		50
20	11515		86136		70601	15528		50371		40
30	24124		81081		60503	20178		65955		30
40	48311		77002		51195	26329		62599		20
50	31811	58	70073		41477	32420		59243		10
49 0	35210	19	65724		31005	38412		55883		57
10	38806	18	60268		20004	44784		52504		011
20	42006		55817		11377	49477		49273		50
30	45800		50485		02678	48090		45816		40
40	49101		45714		40919	52744		42458		30
50	52190		40663		30167	57193		39101		20
50 0	56047	47	35617		21381	62005		35743		10
10	59721		30260		12857	66707		30484		50
20	63250		25000		50157	71312		25048		40
30	66718		20461		40049	75871		20570		30
40	70204		15617		30744	80679		15711		20
50	73710		10870		20021	85337		10895		10
51 0	77247		55821		15215	89958		15594		09
10	80724		00770		05811	94041		12236		50
20	84200		10054		79002	99504		08277		40
30	87767		0004		68121	100196		05518		30
40	91260		1004		571	08621		02158		20
50	94750		0000		0011	13282		73058		10
52 0	98251		77007		1011	17842		95430		08
10	01746		70000		0100	22600		92080		50
20	0524		64000		1000	27211		88720		40
30	08706		59021		20000	31982		85400		30
40	12186		54000		10000	36582		81000		20
50	15616		49000		00000	41200		76300		10
53 0	19010		44700		10000	45800		71000		07
10	22410		39000		00000	50500		65800		50
20	25810		34000		00000	55100		60500		40
30	29200		29000		00000	59800		55200		30
40	32600		24000		00000	64500		50000		20
50	36000		19000		00000	69200		44800		10
54 0	40183		14000		00000	73900		39600		06

Grad. 46.

15. 17

Kkk

Grad. 43.

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M. S.	Smus.	D.	Logarith.	D. Differenc.	P.	Logarith.	P.	Smus.	D.
54	069340183	76	2614541	3840066	03	2275491	64	1201171	76
10	43676	76	09771	20366	03	28190	64	10764	76
20	47167	76	04471	21261	03	81121	64	43111	76
30	50662	76	26900	11552	04	87891	67	45461	76
40	54155	76	94411	01351	0701	92552	67	47861	76
50	57647	76	80177	37115	0701	97421	67	50261	76
55	061140	93	84771	52451	328	01891	67	10951	76
10	64611	93	01102	72711	05562	11575	67	11575	76
20	04600	93	74571	02041	11231	20004	67	12153	76
30	74616	93	00210	11331	15900	24529	67	12733	76
40	75101	93	64200	41510	20570	29061	67	13313	76
50	78124	93	59177	37011	24240	33591	67	13893	76
56	82011	91	54140	74570	29011	38121	67	14473	76
10	85517	91	49101	12110	34011	42651	67	15053	76
20	89023	91	44071	04011	39011	47181	67	15633	76
30	92529	91	39041	80910	43011	51711	67	16213	76
40	96035	91	34011	81411	47011	56241	67	16793	76
50	99541	91	28981	73712	51011	60771	67	17373	76
57	069403036	91	23951	64011	55011	65301	67	17953	76
10	06720	91	18921	16711	59011	69831	67	18533	76
20	10211	91	13891	40010	63011	74361	67	19113	76
30	13717	91	08861	10310	67011	78891	67	19693	76
40	17223	91	03831	17201	71011	83421	67	20273	76
50	20729	91	49011	10211	75011	87951	67	20853	76
58	24235	91	43981	10701	79011	92481	67	21433	76
10	27741	91	38951	17911	83011	97011	67	22013	76
20	31247	91	33921	23811	87011	10154	67	22593	76
30	34753	91	28891	70610	91011	10607	67	23173	76
40	38259	91	23861	60011	95011	11060	67	23753	76
50	41765	91	18831	70421	99011	11513	67	24333	76
59	45271	91	13801	80831	103011	11966	67	24913	76
10	48777	91	08771	80831	107011	12419	67	25493	76
20	52283	91	03741	80831	111011	12872	67	26073	76
30	55789	91	47111	80831	115011	13325	67	26653	76
40	59295	91	41081	80831	119011	13778	67	27233	76
50	62801	91	36051	80831	123011	14231	67	27813	76
59	66307	91	31021	80831	127011	14684	67	28393	76
10	69813	91	25991	80831	131011	15137	67	28973	76
20	73319	91	20961	80831	135011	15590	67	29553	76
30	76825	91	15931	80831	139011	16043	67	30133	76
40	80331	91	10901	80831	143011	16496	67	30713	76
50	83837	91	05871	80831	147011	16949	67	31293	76
59	87343	91	00841	80831	151011	17402	67	31873	76
10	90849	91	95811	80831	155011	17855	67	32453	76
20	94355	91	90781	80831	159011	18308	67	33033	76
30	97861	91	85751	80831	163011	18761	67	33613	76
40	101367	91	80721	80831	167011	19214	67	34193	76
50	104873	91	75691	80831	171011	19667	67	34773	76
59	108379	91	70661	80831	175011	20120	67	35353	76

Continued

Grad. 44.

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M. S.	Sine	D. Lagarith.	D. Different.	D. Lagarith.	D. Sine	M.
0	000000	0	000000	0	000000	0
10	000000	0	000000	0	000000	10
20	000000	0	000000	0	000000	20
30	000000	0	000000	0	000000	30
40	000000	0	000000	0	000000	40
50	000000	0	000000	0	000000	50
60	000000	0	000000	0	000000	60
70	000000	0	000000	0	000000	70
80	000000	0	000000	0	000000	80
90	000000	0	000000	0	000000	90
100	000000	0	000000	0	000000	100
110	000000	0	000000	0	000000	110
120	000000	0	000000	0	000000	120
130	000000	0	000000	0	000000	130
140	000000	0	000000	0	000000	140
150	000000	0	000000	0	000000	150
160	000000	0	000000	0	000000	160
170	000000	0	000000	0	000000	170
180	000000	0	000000	0	000000	180
190	000000	0	000000	0	000000	190
200	000000	0	000000	0	000000	200
210	000000	0	000000	0	000000	210
220	000000	0	000000	0	000000	220
230	000000	0	000000	0	000000	230
240	000000	0	000000	0	000000	240
250	000000	0	000000	0	000000	250
260	000000	0	000000	0	000000	260
270	000000	0	000000	0	000000	270
280	000000	0	000000	0	000000	280
290	000000	0	000000	0	000000	290
300	000000	0	000000	0	000000	300
310	000000	0	000000	0	000000	310
320	000000	0	000000	0	000000	320
330	000000	0	000000	0	000000	330
340	000000	0	000000	0	000000	340
350	000000	0	000000	0	000000	350
360	000000	0	000000	0	000000	360
370	000000	0	000000	0	000000	370
380	000000	0	000000	0	000000	380
390	000000	0	000000	0	000000	390
400	000000	0	000000	0	000000	400
410	000000	0	000000	0	000000	410
420	000000	0	000000	0	000000	420
430	000000	0	000000	0	000000	430
440	000000	0	000000	0	000000	440
450	000000	0	000000	0	000000	450
460	000000	0	000000	0	000000	460
470	000000	0	000000	0	000000	470
480	000000	0	000000	0	000000	480
490	000000	0	000000	0	000000	490
500	000000	0	000000	0	000000	500
510	000000	0	000000	0	000000	510
520	000000	0	000000	0	000000	520
530	000000	0	000000	0	000000	530
540	000000	0	000000	0	000000	540
550	000000	0	000000	0	000000	550
560	000000	0	000000	0	000000	560
570	000000	0	000000	0	000000	570
580	000000	0	000000	0	000000	580
590	000000	0	000000	0	000000	590
600	000000	0	000000	0	000000	600
610	000000	0	000000	0	000000	610
620	000000	0	000000	0	000000	620
630	000000	0	000000	0	000000	630
640	000000	0	000000	0	000000	640
650	000000	0	000000	0	000000	650
660	000000	0	000000	0	000000	660
670	000000	0	000000	0	000000	670
680	000000	0	000000	0	000000	680
690	000000	0	000000	0	000000	690
700	000000	0	000000	0	000000	700
710	000000	0	000000	0	000000	710
720	000000	0	000000	0	000000	720
730	000000	0	000000	0	000000	730
740	000000	0	000000	0	000000	740
750	000000	0	000000	0	000000	750
760	000000	0	000000	0	000000	760
770	000000	0	000000	0	000000	770
780	000000	0	000000	0	000000	780
790	000000	0	000000	0	000000	790
800	000000	0	000000	0	000000	800
810	000000	0	000000	0	000000	810
820	000000	0	000000	0	000000	820
830	000000	0	000000	0	000000	830
840	000000	0	000000	0	000000	840
850	000000	0	000000	0	000000	850
860	000000	0	000000	0	000000	860
870	000000	0	000000	0	000000	870
880	000000	0	000000	0	000000	880
890	000000	0	000000	0	000000	890
900	000000	0	000000	0	000000	900
910	000000	0	000000	0	000000	910
920	000000	0	000000	0	000000	920
930	000000	0	000000	0	000000	930
940	000000	0	000000	0	000000	940
950	000000	0	000000	0	000000	950
960	000000	0	000000	0	000000	960
970	000000	0	000000	0	000000	970
980	000000	0	000000	0	000000	980
990	000000	0	000000	0	000000	990
1000	000000	0	000000	0	000000	1000

Grad. 45.

S.M.

Ekk 2

M. S.	Sinus.	D. Logarith.	D. Different.	D. Logarith.	D.	Sinus.	D.
6	69591280	81	36253091	03	3142108	33110985	71810610
10	94761	81	48088	03	32407	15681	00115
20	98243	81	41086	02	22706	20380	01372
30	69601714	81	38084	01	13005	25070	02507
40	05205	80	33083	00	03304	29779	21790777
50	08685	81	28083	00	34470	34470	03111
60	12166	81	23083	01	83903	39150	03785
70	15647	80	18083	01	74202	43881	04408
80	19127	80	13084	01	64501	48583	05081
90	22607	80	08085	08	54800	53285	05754
100	26087	80	03087	07	45100	57997	06427
110	29567	80	36198089	07	35399	62700	07100
120	33047	79	91092	06	25699	67399	07753
130	36526	80	82095	06	15998	72098	08406
140	40006	80	83099	05	06298	76801	09059
150	43485	79	78103	05	25607	81501	09712
160	46964	79	73106	01	86897	86211	10365
170	50443	78	68113	00	77196	90910	11018
180	53921	79	63119	01	67496	95610	11671
190	57400	78	58125	01	57795	10030	12324
200	60878	79	53130	01	48095	10550	12977
210	64357	78	48135	01	38394	11070	13630
220	67835	78	43140	01	28693	11590	14283
230	71314	77	38154	01	18992	12110	14936
240	74792	77	33162	01	9272	12630	15589
250	78271	76	28171	01	28992	13150	16242
260	81750	76	23180	01	19291	13670	16895
270	85228	75	18189	01	90101	14190	17548
280	88707	75	13198	01	70400	14710	18201
290	92185	74	8207	01	50700	15230	18854
300	95664	74	3106	01	31000	15750	19507
310	99142	73	2005	01	11300	16270	20160
320	102621	73	905	01	100	16790	20813
330	106200	72	800	01	100	17310	21466
340	109779	72	700	01	100	17830	22119
350	113358	71	600	01	100	18350	22772
360	116937	71	500	01	100	18870	23425
370	120516	70	400	01	100	19390	24078
380	124095	70	300	01	100	19910	24731
390	127674	69	200	01	100	20430	25384
400	131253	69	100	01	100	20950	26037
410	134832	68	100	01	100	21470	26690
420	138411	68	100	01	100	21990	27343
430	141990	67	100	01	100	22510	28000
440	145569	67	100	01	100	23030	28657
450	149148	66	100	01	100	23550	29314
460	152727	66	100	01	100	24070	29971
470	156306	65	100	01	100	24590	30628
480	159885	65	100	01	100	25110	31285
490	163464	64	100	01	100	25630	31942
500	167043	64	100	01	100	26150	32599

Grad. 44.

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M. S.	Sin.	D.	Logarith.	D.	Different.	D	Logarith.	D	Sin.	D.
12	0	76	607410	85	2794890	0030	33240411	15	71691061	80
10	19	75	68717		83190		85127		87681	50
20	23	76	63131		73490	0030	80842		84301	40
30	26	75	58348	84	63790		94558	16	80920	30
40	30		53364		54090		99374		77540	20
50	33	74	48381	83	44330		33303991	74	74159	10
3	36	73	41398		34690		08708		70778	047
10	40	74	36416	82	24991	669	12425	18	67397	50
20	44	75	31434		15191	669	18143		64016	40
30	47	74	26453	81	05591	00	22861	19	60634	30
40	51	75	21472		2695394		27580		57253	20
50	54	74	16491	80	86191		32700	4	53871	10
1	58	73	11512		76403	54	37020	20	50489	046
10	61	74	06533	79	66791	54	41740	21	47107	50
20	65	75	01554		57091	54	46461		43725	40
30	68	74	96576	80	47394	54	51182	22	40343	30
40	72		91598		37694		55934		36960	20
50	75	73	86620	77	27704		60626	23	33577	10
1	79		81641		18144		65334		30194	045
10	82	72	76663	76	08594		70071	24	26811	50
20	85		71686		157894		74796		23428	40
30	89	73	66714	75	09004		79520	25	20041	30
40	92	74	61737	74	70404	95	84343		16661	20
50	96	75	56765		60704	95	89170		13277	10
1	99	74	51791		50904	00	93895	26	09893	044
10	03		46817		41004	00	98411		05905	50
20	07	73	41844		31104	00	33403147	27	01215	40
30	10		36871	72	20997	00	07874		7159741	30
40	14		31899		11204	00	12601		96356	20
50	18	72	26927	71	11504	00	17320	28	91971	10
1	21		21956		01604		22057		89586	043
10	25	72	16984	70	402104		26785		86201	50
20	29		11991		30304		31514	29	82816	40
30	32		06991		20404		36241	30	79421	30
40	36		01991		10504		40973	31	76045	20
50	40		96991		00604		45704	32	72659	10
1	44		91991		90704		50431	33	69273	042

Grad. 45.

S.M.

M. S.	Sinus.	D.	Logarith.	D.	Difference.	D.	Logarith.	D.	Sinus.	D.
18 0	79841229	19	3574157	68	241794	2	241794	19	150100	19
10	44998	69	87171	69	34275	3	34275	20	61811	20
20	48448	70	84128	57	24154	4	24154	21	61701	21
30	51937	7469	79237	44	1460	5	1460	22	61581	22
40	55406		74271		6402	6	6402	23	61451	23
50	58875		69305	3966	230820	7	2407	24	61321	24
19 0	62344		64338		87300	8	74815	25	61191	25
10	65813		59374	45	77817	9	72514	26	61061	26
20	69281		54407		62118	10	85200	27	60931	27
30	72750	68	49445	63	52474	11	93014	28	60801	28
40	76218		44482		42728	12	97700	29	60671	29
50	79686		39519	62	37014	13	102100	30	60541	30
20 0	83154		34557		27217	14	1074	31	60411	31
10	86622	67	29595	61	17617	15	12972	32	60281	32
20	90089	68	24634		77617	16	1677	33	60151	33
30	93557	67	19673		112120	17	21454	34	60021	34
40	97024		14712		8411	18	26170	35	59891	35
50	69900491		9742	60	7162	19	30879	36	59761	36
21 0	03958		02701		60124	20	35589	37	59631	37
10	07425	66	3579888		5444	21	40300	38	59501	38
20	10891	67	94720	18	48725	22	45000	39	59371	39
30	14358	66	89761		43027	23	49699	40	59241	40
40	17824		84802		38322	24	54398	41	59111	41
50	21290		80000		33600	25	59097	42	58981	42
22 0	24756		75201		28877	26	63796	43	58851	43
10	28222	65	70201		24154	27	68495	44	58721	44
20	31688	66	65201		19431	28	73194	45	58591	45
30	35154		60201		14708	29	77893	46	58461	46
40	38620		55201		10000	30	82592	47	58331	47
50	42086		50201		5277	31	87291	48	58201	48
23 0	45552		45201		5777	32	91990	49	58071	49
10	49018	64	40201		5277	33	96689	50	57941	50
20	52484	65	35201		5777	34	101388	51	57811	51
30	55950		30201		5277	35	106087	52	57681	52
40	59416		25201		5777	36	110786	53	57551	53
50	62882		20201		5277	37	115485	54	57421	54
24 0	66348		15201		5777	38	120184	55	57291	55
10	69814		10201		5277	39	124883	56	57161	56
20	73280		5201		5777	40	129582	57	57031	57
30	76746		0000		5277	41	134281	58	56901	58
40	80212				5777	42	138980	59	56771	59
50	83678				5277	43	143679	60	56641	60

M.N.		D. Logarithm.		D. Different		D. Logarithm.		D. Series.		D.	
+	4000000	4	7571500	1	104549	3362	055	+	7144728	60	
10	61791	67	14850	2	84850	99	11800	+	43836	92	50
20	71164	67	05780	3	75154	99	30541	+	42484	9	40
30	76125	67	00750	4	65453	98	35297	+	37081	30	
40	80188	67	15691	5	55755	99	40048	+	33633	20	
50	83641	67	00872	6	46056	99	44100	+	30278	10	
60	86725	67	91901	7	36357	99	48546	+	26912	035	
70	89571	67	80950	8	26659	99	53497	+	23519	50	
80	92246	67	70000	9	16961	99	59048	+	20126	40	
90	94805	67	59050	10	07262	99	63100	+	16733	30	
100	97200	67	48100	11	180764	99	68551	+	13330	20	
110	99450	67	37150	12	85500	99	73304	+	09945	10	
120	01700	67	26200	13	-2558	99	78057	+	06551	034	
130	03850	67	15250	14	-8620	99	82810	+	03157	50	
140	05900	67	04300	15	5802	99	87564	+	-139283	95	40
150	07950	67	-6750	16	40074	99	92318	+	96368	30	
160	09900	67	-17800	17	30376	99	97071	+	92073	20	
170	11850	67	-28900	18	20678	99	101828	+	89579	10	
180	13800	67	-40000	19	10980	99	00584	+	86184	033	
190	15750	67	-51100	20	1282	99	11340	+	82788	50	
200	17700	67	-62200	21	50124	99	12097	+	79393	40	
210	19650	67	-73300	22	100080	99	20874	+	75098	30	
220	21600	67	-84400	23	11185	99	29612	+	72002	20	
230	23550	67	-95500	24	20890	99	38370	+	68006	10	
240	25500	67	-106600	25	6151	99	47128	+	65810	032	
250	27450	67	-117700	26	10852	99	55887	+	62414	50	
260	29400	67	-128800	27	19735	99	64644	+	59010	40	
270	31350	67	-139900	28	28618	99	73401	+	55614	30	
280	33300	67	-151000	29	37501	99	82158	+	52224	20	
290	35250	67	-162100	30	46384	99	90915	+	48833	10	
300	37200	67	-173200	31	55267	99	99672	+	45441	031	
310	39150	67	-184300	32	64150	99	108429	+	42047	50	
320	41100	67	-195400	33	73033	99	117186	+	38656	40	
330	43050	67	-206500	34	81916	99	125943	+	35265	30	
340	45000	67	-217600	35	90799	99	134700	+	31874	20	
350	46950	67	-228700	36	99682	99	143457	+	28483	10	
360	48900	67	-239800	37	108565	99	152214	+	25092	030	
370	50850	67	-250900	38	117448	99	160971	+	21701	50	
380	52800	67	-262000	39	126331	99	169728	+	18310	40	
390	54750	67	-273100	40	135214	99	178485	+	14919	30	
400	56700	67	-284200	41	144097	99	187242	+	11528	20	
410	58650	67	-295300	42	152980	99	196000	+	8137	10	
420	60600	67	-306400	43	161863	99	204757	+	4746	030	
430	62550	67	-317500	44	170746	99	213514	+	1355	50	
440	64500	67	-328600	45	179629	99	222271	+	0004	40	
450	66450	67	-339700	46	188512	99	231028	+	-3387	30	
460	68400	67	-350800	47	197395	99	239785	+	-6796	20	
470	70350	67	-361900	48	206278	99	248542	+	-10205	10	
480	72300	67	-373000	49	215161	99	257299	+	-13614	030	
490	74250	67	-384100	50	224044	99	266056	+	-17023	50	
500	76200	67	-395200	51	232927	99	274813	+	-20432	40	
510	78150	67	-406300	52	241810	99	283570	+	-23841	30	
520	80100	67	-417400	53	250693	99	292327	+	-27250	20	
530	82050	67	-428500	54	259576	99	301084	+	-30659	10	
540	84000	67	-439600	55	268459	99	309841	+	-34068	030	
550	85950	67	-450700	56	277342	99	318598	+	-37477	50	
560	87900	67	-461800	57	286225	99	327355	+	-40886	40	
570	89850	67	-472900	58	295108	99	336112	+	-44295	30	
580	91800	67	-484000	59	303991	99	344869	+	-47704	20	
590	93750	67	-495100	60	312874	99	353626	+	-51113	10	
600	95700	67	-506200	61	321757	99	362383	+	-54522	030	
610	97650	67	-517300	62	330640	99	371140	+	-57931	50	
620	99600	67	-528400	63	339523	99	379897	+	-61340	40	
630	101550	67	-539500	64	348406	99	388654	+	-64749	30	
640	103500	67	-550600	65	357289	99	397411	+	-68158	20	
650	105450	67	-561700	66	366172	99	406168	+	-71567	10	
660	107400	67	-572800	67	375055	99	414925	+	-74976	030	
670	109350	67	-583900	68	383938	99	423682	+	-78385	50	
680	111300	67	-595000	69	392821	99	432439	+	-81794	40	
690	113250	67	-606100	70	401704	99	441196	+	-85203	30	
700	115200	67	-617200	71	410587	99	449953	+	-88612	20	
710	117150	67	-628300	72	419470	99	458710	+	-92021	10	
720	119100	67	-639400	73	428353	99	467467	+	-95430	030	
730	121050	67	-650500	74	437236	99	476224	+	-98839	50	
740	123000	67	-661600	75	446119	99	484981	+	-102248	40	
750	124950	67	-672700	76	455002	99	493738	+	-105657	30	
760	126900	67	-683800	77	463885	99	502495	+	-109066	20	
770	128850	67	-694900	78	472768	99	511252	+	-112475	10	
780	130800	67	-706000	79	481651	99	519999	+	-115884	030	
790	132750	67	-717100	80	490534	99	528756	+	-119293	50	
800	134700	67	-728200	81	499417	99	537513	+	-122702	40	
810	136650	67	-739300	82	508300	99	546270	+	-126111	30	
820	138600	67	-750400	83	517183	99	555027	+	-129520	20	
830	140550	67	-761500	84	526066	99	563784	+	-132929	10	
840	142500	67	-772600	85	534949	99	572541	+	-136338	030	
850	144450	67	-783700	86	543832	99	581298	+	-139747	50	
860	146400	67	-794800	87	552715	99	590055	+	-143156	40	
870	148350	67	-805900	88	561598	99	598812	+	-146565	30	
880	150300	67	-817000	89	570481	99	607569	+	-149974	20	
890	152250	67	-828100	90	579364	99	616326	+	-153383	10	
900	154200	67	-839200	91	588247	99	625083	+	-156792	030	
910	156150	67	-850300	92	597130	99	633840	+	-160201	50	
920	158100	67	-861400	93	606013	99	642597	+	-163610	40	
930	160050	67	-872500	94	614896	99	651354	+	-167019	30	
940	162000	67	-883600	95	623779	99	660111	+	-170428	20	
950	163950	67	-894700	96	632662	99	668868	+	-173837	10	
960	165900	67	-905800	97	641545	99	677625	+	-177246	030	
970	167850	67	-916900	98	650428	99	686382	+	-180655	50	
980	169800	67	-928000	99	659311	99	695139	+	-184064	40	
990	171750	67	-939100	100	668194	99	703896	+	-187473	30	
1000	173700	67	-950200	101	677077	99	712653	+	-190882	20	
1010	175650	67	-961300	102	685960	99	721410	+	-194291	10	
1020	177600	67	-972400	103	694843	99	730167	+	-197700	030	
1030	179550	67	-983500	104	703726	99	738924	+	-201109	50	
1040	181500	67	-994600	105	712609	99	747681	+	-204518	40	
1050	183450	67	-1005700	106	721492	99	756438	+	-207927	30	
1060	185400	67	-1016800	107	730375	99	765195	+	-211336	20	
1070	187350	67	-1027900	108	739258	99	773952	+	-214745	10	
1080	189300	67	-1039000	109	748141	99	782709	+	-218154	030	
1090	191250	67	-1050100	110	757024	99	791466	+	-221563	50	
1100	193200	67	-1061200	111	765907	99	800223	+	-224972	40	
1110	195150	67	-1072300	112	774790	99	808980	+	-228381	30	
1120	197100	67	-1083400	113	783673	99	817737	+	-231790	20	
1130	199050	67	-1094500	114	792556	99	826494	+	-235199	10	
1140	201000	67	-1105600	115	801439	99	835251	+	-238608	030	
1150	202950	67	-1116700	116	810322	99	844008	+	-242017	50	
1160	204900	67	-1127800	117	819205	99	852765</				

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D	Logarith	D.	Sinus.	D.
30 0	70090926	58	35537084	33	174518	9	33792286	58	7122841	10
10	94384		32751		35721	98	97010	1	18047	10
20	97842		27818		26022	97	33801795	1	18431	10
30	70101299	57	22886	32	16326	96	06560	56	14634	10
40	04757	58	17954		06628	98	11326		11451	10
50	08214	57	13023	31	1606931	97	16092	67	08052	10
31 0	11671	57	08092	4930	87233	98	20854		08854	10
10	15128		03162		77536	97	25026	68	71234	10
20	18585	56	35498232		67825	96	10381		71234	10
30	22041	57	93302	29	58140	97	31701	69	24451	10
40	25498	56	88373		48442	98	39931		91081	10
50	28954		83444		38744		44720	70	27371	10
32 0	32410		78516	28	29046	97	41470		84214	10
10	35860		73539	27	19349	98	54240	1	80815	10
20	39321	55	68662		09651	97	58011	1	77455	10
30	42777	55	63738	26	1599914	98	63182		74015	10
40	46232	56	58809	27	90236	97	68311	72	70615	10
50	49688	55	53883	26	80558	98	73325		67215	10
33 0	53143	55	48958	25	70861	97	78097	73	65815	10
10	56597	54	44033		61163	97	82870		60475	10
20	60052	55	39109	24	51461	98	87643	74	57065	10
30	63507	54	34185	23	41768	97	92417		53705	10
40	66961		29262		32071	98	97101		50305	10
50	70415		24339	22	22373	97	11021906		47824	10
34 0	73869		19417		12676		06741		44842	10
10	77323		14495		02974		11916		40440	10
20	80777		09574	21	149328	98	16232	75	38015	10
30	84231	53	04953	20	83584	97	21009		34735	10
40	87684		35399731		71887	98	25846	76	29715	10
50	91137		94815		64189		30624		26030	10
35 0	94590		89891		54491		35407		21015	10
10	98043		84778	19	44253	97	40181		18015	10
20	10001408		50016	18	31008	98	44960		14015	10
30	06646	52	75138		25758	97	49740		10015	10
40	06609		70221	17	15700	97	54519		06015	10
50	11557		65304		04801		59295		02015	10
36 0	15107		60387		1266308		64079		08009	10

Grad. 47.

8.11

M.S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
36°	70215305	51	35360387	15	1396308	97	33704079	81	71202605	60
10	18757	51	55471	15	86611	98	68860	82	71199200	50
20	22209	51	50555	15	76912	98	72642	82	95796	40
30	25661	51	45640	15	67216	97	78424	84	92391	30
40	29112	51	40725	14	57518	98	83207	84	88887	20
50	32563	51	35811	14	47821	9697	87990	85	85582	10
37°	36014	50	30897	13	38124	97	92773	84	82177	023
10	39465	50	25984	12	28427	97	97557	86	78772	50
20	42916	50	21071	12	18730	97	34002341	85	75366	40
30	46367	50	16159	11	09033	97	07126	85	71961	30
40	49817	50	11247	11	1299336	96	11911	86	68555	20
50	53267	50	06336	10	89634	97	16607	87	65149	10
38°	56717	49	01425	10	79942	96	21483	87	61743	022
10	60167	49	35296515	05	70245	97	26270	88	58337	50
20	63617	49	91605	05	60545	97	31057	88	54930	40
30	67067	49	86696	08	50851	96	35845	89	51524	30
40	70516	49	81787	08	41154	97	40633	90	48117	20
50	73965	49	76879	07	31453	97	45421	90	44710	10
39°	77414	48	71971	07	21761	97	50210	90	41303	021
10	80863	48	67064	07	12064	97	55000	91	37896	50
20	84312	48	62157	07	02367	97	59790	91	34488	40
30	87761	48	57250	07	1192670	97	64580	91	31081	30
40	91209	48	52344	07	82973	97	69371	92	27673	20
50	94658	48	47438	05	73276	97	74162	92	24265	10
40°	98106	47	42532	05	63579	97	78954	93	20857	020
10	70301554	47	37628	04	53582	97	83746	93	17449	50
20	05001	47	32724	04	44185	97	88533	94	14041	40
30	08449	47	27820	03	34488	97	93332	94	10632	30
40	11897	47	22917	03	24791	97	98120	95	07223	20
50	15344	47	18014	02	15004	97	102920	95	03814	10
41°	18791	46	13111	02	05397	96	07715	96	00405	015
10	22238	46	08210	01	1095700	96	12510	96	71096996	50
20	25685	46	03309	01	86003	96	17306	97	93587	40
30	29131	46	35198408	00	76106	96	22102	97	90177	30
40	32578	46	93508	00	66610	97	26898	97	86767	20
50	36024	46	88608	00	56913	96	31695	97	83357	10
60	39470	46	83709	00	47217	96	36492	97	79947	018

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.
42 0	70339470	346	35183709	99	1047217	97	34136492	4798	71079947	340
10	42916		73810	98	37520	96	41290		76537	310
20	46361		73911		27824	97	46088	99	73127	40
30	49808	45	69014	4897	18127	96	50887		69718	11
40	53253		64117		08431	97	55686		66305	30
50	56698	46	59220		998734	96	60486	4800	62894	20
43 0	60144	45	54323	96	89037	97	65286	01	59483	17
10	63589	44	49427		79340	96	70087		56072	50
20	67031	45	44531	95	69643	97	74888	02	52661	40
30	70478		39636		59946	96	79690		49249	12
40	73923	44	34741	94	50249	97	84492		45838	30
50	77367	45	29847		40553	96	89294	03	42426	20
44 0	80811		24953	93	30856	97	94097		39014	16
10	84255		20060		21160	96	98900		35601	50
20	87699	43	15167	92	11463	97	34203704	04	32189	40
30	91142	44	10275		01767	96	08508		28776	13
40	94586	43	05383	91	892070	97	13313	05	25364	30
50	98029		00492		82373	96	18119	06	21951	20
45 0	70401472		35095601	90	72676		22925		18538	15
10	04915		90711		62979	98	27732	07	15124	40
20	08358		85821		53282	96	32539		11711	30
30	11801	42	80931	89	43584	97	37347	08	08297	20
40	15243	43	76042		33888	96	42154		04884	10
50	18686	42	71153	88	24191	97	46962	09	01470	14
46 0	22128		66265	87	14495		51770		70998056	14
10	25570		61378		04799	97	56575		94641	50
20	29012	41	56491		795103	96	61388	10	91227	40
30	32453	42	51604	86	85406		66198		87810	30
40	35895	41	46718		75709	97	71009	11	84398	20
50	39336		41832	85	66012	96	75820		80983	10
47 0	42777		36947		56316	97	80631	12	77568	16
10	46218		32062		46615	96	85443		74152	50
20	49659	40	27178	84	36923	97	90255	13	70737	40
30	53100	41	22294	83	27226		95068		67327	30
40	56540	40	17411		17530	97	99881	14	63906	20
50	59981		12528	82	07833	96	34304695		60490	10
60	63421		07646		698137		09509		57074	12

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M. S.	Sinus.	D.	Logarith.	D.	Different.	D.	Logarith.	D.	Sinus.	D.	
48 0	70463421	3440	35007646	82	698137	97	34309509	4815	70957074	17	60
10	668661	3440	02764	81	88440	96	14324	16	53657	16	50
20	70301	0	34997883	4080	78744	97	19139	17	50241	17	40
30	73741	39	93002	79	69047	96	23955	18	46824	18	30
40	77180	39	88122	78	59351	97	28771	19	43408	19	20
50	80619	40	83242	77	49655	96	33587	20	39991	20	10
49 0	84059	39	78362	76	39958	97	38404	21	36574	21	0 11
10	87498	38	73483	75	30262	96	43221	22	33156	22	50
20	90936	39	68605	74	20566	97	48039	23	29739	23	40
30	94375	37	63727	73	10870	96	52857	24	26321	24	30
40	97814	38	58849	72	01173	97	57676	25	22904	25	20
50	70501252	38	53972	71	591477	96	62495	26	19486	26	10
50 0	04690	37	49095	70	81780	97	67315	27	16068	27	0 10
10	08128	36	44219	69	72084	96	72135	28	12649	28	50
20	11566	37	39343	75	62387	97	76956	29	09231	29	40
30	15004	37	34468	74	52691	96	81777	30	05812	30	30
40	18441	38	29593	73	42994	97	86599	31	02394	31	20
50	21879	37	24719	72	33298	96	91421	32	70898975	32	10
51 0	25316	36	19845	71	23601	97	96244	33	95556	33	0 9
10	28753	35	14972	70	13905	96	14401067	34	92136	34	50
20	32190	36	10099	69	04208	97	09891	35	88717	35	40
30	35626	37	05227	68	494512	96	10715	36	85297	36	30
40	39063	36	00355	67	84816	97	15539	37	81878	37	20
50	42499	37	34895483	71	75119	96	20364	38	78458	38	10
52 0	45936	36	90612	70	65423	97	25185	39	75038	39	0 8
10	49372	35	85742	69	55727	96	30015	40	71617	40	50
20	52807	36	80872	68	46031	97	34841	41	68197	41	40
30	56243	35	76002	67	36334	96	39668	42	64776	42	30
40	59679	34	71133	66	26638	97	44495	43	61356	43	20
50	63114	34	66264	65	16942	96	49322	44	57935	44	10
53 0	66549	33	61396	64	07246	97	54150	45	54514	45	0 7
10	69984	32	56528	63	397549	96	58979	46	51093	46	50
20	73419	31	51661	62	87853	97	63808	47	47671	47	40
30	76854	34	46794	61	78156	96	68638	48	44250	48	30
40	80288	35	41928	60	68460	97	73468	49	40828	49	20
50	83723	34	37062	59	58763	96	78299	50	37406	50	10
60	87157	34	32197	58	49067	97	83130	51	33984	51	0 6

Grad. 45.

S. M.

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n.	Sinus.	D.	Logarithm D	Different	D.	Logarithm D	Sinus.	D.
54	70587157	33	34831197	65	349067	77	70833984	60
10	90591	33	27332	64	34370	77	30562	50
20	94025	33	21468	64	29674	9596	27139	40
30	97459	33	17604	63	19978	97	13717	30
40	70600852	33	12741	62	10282	96	20294	20
50	04326	33	07878	61	00586	97	16871	10
55	07759	33	03015	62	290889	96	13448	0
10	11192	33	34798153	61	81192	96	10025	50
20	14625	33	93292	60	71496	97	06601	40
30	18058	32	88431	59	61800	96	03178	30
40	21490	32	83570	58	52104	97	70799754	20
50	24922	33	78710	57	42408	96	96330	10
56	28355	32	73850	56	32711	96	92406	0
10	31787	31	68991	55	23015	97	89482	50
20	35219	31	64132	54	13318	96	86057	40
30	38650	32	59274	53	03621	97	82633	30
40	42082	31	54416	52	193925	96	79208	20
50	45513	31	49559	51	84229	96	75783	10
57	48944	30	44702	50	74533	97	72358	0
10	52375	30	39846	49	64837	96	68933	50
20	55806	30	34990	48	55141	97	65507	40
30	59237	30	29135	47	45445	96	62062	30
40	62668	30	25280	46	35749	97	58656	20
50	66098	30	20425	45	26052	96	55230	10
58	69528	29	15571	44	16356	97	51804	0
10	72958	29	10718	43	06660	96	48378	50
20	76388	29	05865	42	96964	97	44911	40
30	79818	29	01012	41	87267	96	41525	30
40	83248	29	34696160	40	77571	97	38098	20
50	86677	28	91308	39	67874	96	34671	10
59	90106	28	86457	38	58178	97	31244	0
10	93535	28	81606	37	48481	96	27817	50
20	96964	28	76756	36	38785	97	24389	40
30	70700395	28	71906	35	29089	96	20962	30
40	03821	28	67057	34	19393	97	17534	20
50	07250	28	62208	33	9697	96	14106	10
60	10678	28	57359	32	0	97	10678	0

Grad. 45.

S.M.

EMENDANDA IN CANONE.

In Sinibus: *Ii. 4. pag. 1. col. antepenult. lege 90482705. ad 47. minut. 60. sec. 17. 4. pag. 1. ad min. 39. sec. 50. l. 58302927.*
a. Differentijs Sinuum: Z. 4. p. 2. columnā tertiā, antepenultimā notā omnes sine 0.

In Logarithmis: I. 2. p. 2. Initium Logarithmorum. transversim positum sit 216. reducaturq; ad 697518. I 3. p. 1. Similiter & in fronte statim columna 41a init. Logar. transv. positum sit 216. P. 4. p. 1. ad min. 35. sec. 6. lege 548093. Q. 2. p. 2. ad min. 11. sec. 10. l. 548073. Ibid. ad min. 11. sec. 40. l. 480747. K. 1. p. 2. ad min. 44. sec. 0. l. 224900. X. 2. p. 1. ad min. 59. sec. 30. l. 55022. A. 4. t. p. 1. ad min. 47. sec. 20. l. 38650. A. 3. p. 2. in fronte col. 4. numeros transversos l. 113. C. 3. p. 2. col. eadem, numeros eosdem l. 105. Ii. 4. p. 1. ad min. 44. sec. 0. l. 55981. S. f. 1. p. 2. ad min. 54. sec. 0. l. 63782916. U. 2. p. 2. ad min. 42. sec. 0. l. 5890578. Y. 4. p. 2. ad min. 42. sec. 0. l. 53864019. Ibid. ad min. 44. sec. 20. dele initium 537. & reponit ad min. 44. sec. 20. Z. 2. p. 1. ad min. 0. sec. 0. l. 53139361. E. e. 3. pag. 1. ad min. 16. sec. 0. l. 42037.

In Differentijs Logarithmorum: M. m. 2. p. 1. col. 5. inter min. 17. sec. 50. & 60. l. 94. A. a. 2. p. 1. col. 5. Differentiam transversalem l. 6478.

In Differentialibus: R. r. 3. & R. r. 4. integris duobus folijs initia Differentialium ita corrigantur: 493. 492. 491. 490. 489. 488. 487. 486. 485. 484. 483. 482. 481. 480. 479. 478. 477. Y. y. 3. p. 1. Tertium & seqq. initia legantur ita: 339. 338. 337.

In Differentijs Differentialium: G. g. 1. p. 1. inter min. 3. sec. 10. & 20. l. 56.

In Serie Graduum: Y. 4. p. 1. & 2. infernè l. 72. Z. 1. p. 1. supernè l. 17. D. d. 1. p. 1. sup. l. 20. inf. 69. H. b. 4. p. 2. sup. l. 24. inf. 65.

In Serie Minutorum: K. 1. p. 2. in col. ult. minuta adscendentia corrige ita: 48. 49. 50. 51. 52. 53. Ii. 4. p. 1. in fine col. ult. l. 42. Q. q. 4. p. 2. col. 1. suo l. 58. Iii. 1. p. 1. in fine col. ult. l. 54.

Omissum est in Logarithmis: M. 1. p. 1. col. 3. initium transv. ponendum in fronte statim 113.

Transposita: P. 3. p. 2. & P. 4. p. 1. sunt transposita: ergo numerus in fronte ita signentur, ut suo quavis loco restituatur. Z. 2. p. 2. Tituli Columnar. secundæ, quartæ, sextæ & octavæ: uti & Titulus columna quartæ Z. 2. 3. p. 1. partim transpositi, partim vitiosi sunt, qui tamen facile ex reliquis paginis restitui possunt. Z. 2. 3. p. 1. Differentia Logar. inter min. 16. sec. 0. & sec. 10. col. 5. deleatur & reponatur inter min. 15. sec. 40. & 50.

F I N I S.



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impensis & sumtibus Martini Guttij
Bibliopolæ Colonienſis.

Anno cło lcc XXIV.

C 53.

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